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Networked improvement communities

Networked
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communities

The discipline of improvement science meets the power of networks

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Abstract

Purpose – The purpose of this paper is to delineate an approach to quality assurance in education called networked improvement communities (NICs) that focused on integrating the methodologies of improvement science with few of the networks. Quality improvement, the science and practice of continuously improving programs, practices, processes, products and services within organized social systems, is a still-evolving area in education. This paper is the first of seven elaborating upon different approaches to quality improvement in education[1]. It delineates a new methodology called the NICs model. Developed by the Carnegie Foundation for the Advancement of Teaching, the approach is aimed at continuously improving the quality of practices, processes and outcomes in targeted problem areas in education systems.

Design/methodology/approach – The paper presents the historical development, theoretical foundations, core principles and adaptation of key elements of the NICs model for quality improvement in education. A case study specifically examines the problem of fostering new teacher effectiveness and retention in large public school systems in the USA.

Findings – The six principles underlying the NICs model are as follows: make the work problem-specific and user-centered, focus on variation in performance, see the system that produces outcomes, improve at scale what you can measure, use disciplined inquiry to drive improvement and accelerate learning through networked communities.

Originality/value – Few theoretical treatments and demonstration cases are currently available that examine the application of common models of quality improvement in education. This paper elaborates on one promising approach. In addition to examining the NICs model, the paper derives added value by allowing comparisons with seven widely used quality improvement approaches treated in this volume.

Keywords Quality improvement, NICs

Paper type Research paper



Introduction

Quality improvement, the science and practice of continuously improving programs, practices, products, processes or services within organized social systems, is a still-evolving area in education. This paper delineates a new methodology called the networked

improvement communities (NICs). Developed by the Carnegie Foundation for the Advancement of Teaching in the USA, the approach is aimed at continuously improving the quality of practices, processes and outcomes in targeted problem areas in education systems.

The Carnegie Foundation’s NICs are a relatively recent arrival to the field of quality improvement in general. Its origins date back to 2008, when Anthony Bryk assumed the presidency of the Carnegie Foundation for the Advancement of Teaching. However, its relative youth belies the extensive history of ideas and methods that undergird it. In essence, it combines two main ideas: “improvement science”, a formal methodology for pursuing improvement as a part of an organizational system’s continuous quality management practices (after [Deming, 1994](#)); and “networked science”, the notion of collective social learning toward solving complex problems ([Engelbart, 2003](#); [Nielsen, 2011](#)).

Like other quality improvement methods, NICs focus on addressing gaps between the aspirations of an education system and its capacity to deliver a high-quality education to all its communities, in every classroom and for every child. NICs aim to address persistent problems of practice that have resisted previous reform efforts by linking diverse kinds of expertise from research, educational design and practice in a joint quality improvement effort. NICs are scientific learning communities distinguished by four essential characteristics. Well-functioning NICs, in theory, are:

- (1) *focused* on a well-specified, common aim;
- (2) *guided* by a deep understanding of a targeted problem, the system that produces it, and a shared working theory of how to improve it;
- (3) *disciplined* by the rigor of “improvement science” principles and methods; and
- (4) *coordinated* as networks to accelerate the development, testing and refinement of the interventions, their rapid diffusion out into the field and their effective integration into varied educational contexts ([Bryk et al., 2015](#)).

History of Carnegie’s networked improvement communities

Carnegie’s NICs come from combining two lines of thought: the discipline of *improvement science* and the power of *networked science*. The underlying ideas from these two schools of thought are executed through NICs. This section discusses the history of both of these essential ideas.

Networked improvement community. The term, NIC, was originally coined by the American engineer and inventor [Engelbart \(1992, 2003\)](#). Engelbart articulated the NIC as a model of social learning that could augment collective human intelligence to solve complex problems ([Figure 1](#)). Carnegie’s NICs adapt Engelbart’s tiered model of organizational

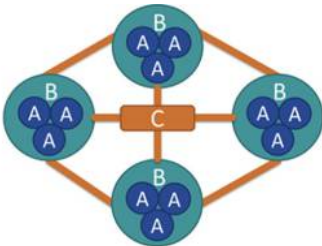


Figure 1.
Schema for social
learning

Source: Adapted from Engelbart (1992, 2003)

learning and improvement, which comprises three levels of social learning, A-C (Park and Takahashi, 2013; Bryk *et al.*, 2015).

“A” level learning concerns front-line practitioners as individuals. In a learning organization, practitioners reflect upon their practices in the interest of improving the same, with a focus on the primary activity in which the organization engages, such as teaching and learning in educational settings. “B” level learning is shared at the organizational level and increases individuals’ capabilities to perform “A” level responsibilities through the use of quality improvement methods. “C” level learning is unique to networks. Derived from cross-organizational analytics and reflection, it enhances the ability of organizations (and the individuals within them) to improve by engaging in inter-institutional quality improvement work.

Bryk *et al.* (2011, p. 7) describe “C” level learning as the place where:

[...] institutions engage in concurrent development, working on problems and proposed solutions that have a strong family resemblance. Concurrent activity across organizational contexts puts relevant aspects of the context in sharp relief and can help each local setting see its efforts from new vantage points.

Thus, by positioning improvement work in structured networks, NICs provide a ready context for inter-organizational interaction and learning.

“C” level of learning presupposes an ability to question the fundamental goals and design of one’s own organization and to learn from others (Park and Takahashi, 2013). NICs also draw from Argyris’ (1976) theory of single- and double-loop learning. According to this theory, single-loop learning does not challenge the goals, design or activities of the organization, whereas with double-loop learning, “participants would be able to ask questions about changing fundamental aspects of the organization” (Argyris, 1976, p. 367). This ability to critically question as individuals or units engage with processes, goals and structures of their organizations, is necessary for the type of inter-institutional learning and collaboration envisioned in the NICs model of continuous improvement.

Improvement science. To structure learning within the network, NICs draw on the tools and methodologies of improvement science. The field of *improvement science* has grown over the past century, spreading to multiple sectors (e.g. agriculture, manufacturing, service industries and, more recently, healthcare). Professionals in these fields have recognized that achieving quality in practice requires more than good subject matter knowledge necessary for a given product or service. Achieving quality also requires a complementary set of skills and knowledge of improvement itself. This has led to an investment in “the science of improving” and the development of an associated set of methodologies.

The history of improvement science. Deming (1994) was one of the early pioneers of improvement science. He spent most of his career studying and advising international corporations on how to create and manage organizations that were skilled at continuously improving outcomes, even as the targeted outcomes evolved. Toward the end of his career in 1993, Deming introduced what he called “the System of Profound Knowledge” in his book *The New Economics*. This work essentially outlines what Deming postulated were the main attributes necessary for organizations to be skilled at continuously improving their practices (Figure 2).

In Figure 2, *Appreciation of a system* refers to the ability of organizational members to understand organizations as systems, and to productively enact changes to influence their outcomes. Such “systems thinking” involves articulating what a system’s interdependent components and processes are, and integrating these so that they work together as a whole to achieve a shared aim. He contrasted the functional value of a systems perspective to operating of a set of discrete, independent departments in organizations. The latter is more typically the case in education.



Source: Deming (1994)

Figure 2.
Deming's system of
profound knowledge

Through his collaboration with Walter Shewhart, Deming identified *Knowledge of Variation* as a key window into improving the performance of systems (Figure 2). Variation in the quality of a product or service should be expected in a system, according to Deming. But, the causes of variation need to be understood to productively target improvement efforts and assess whether the desired improvements in outcomes are occurring. Deming observed that one of the main inefficiencies in improvement efforts is in overreacting or underreacting to variation.

When undesirable performance is detected, there is also a need to engage people in purposefully structured *learning* so as to generate new knowledge to improve the system. Deming uses the expression *Theory of Knowledge* (Figure 2) to describe this component. It is a philosophical expression gleaned from Lewis' (1929) book, *Mind and the New World Order: A Theory of Knowledge*. Central to knowledge building is the articulation and testing of theories about the expected outcomes of changed practices or interventions. Deming emphasized the importance of making predictions to put one's current theories to the test.

The final element in the System of Profound Knowledge focuses on motivation as a key element for improving quality by asking the question, what motivates people to want to do a job well? Termed "*Psychology*" by Deming (Figure 2), it captures for practical use what is known about change and human behavior – for individuals, within organizational units and entire systems.

For Deming, improvement is achieved by bringing the four elements in Figure 2 together and combining them with subject matter knowledge relevant to an organization's product development or service provision goals. In essence, his definition of improvement science unified the System of Profound Knowledge with Subject Matter Knowledge of organizational participants, to drive improvements in practice settings (For a more complete treatment of the System of Profound Knowledge, see Deming, 1994 and Langley *et al.*, 2009).

Recent developments in improvement science ideas. Many different improvement approaches presently derive from Deming's (1994) original work, viewing that as a key intellectual influence in the quality improvement field (including the Lean and Six Sigma models treated in this volume). Shaped by specific disciplinary or applied fields, each approach has developed different methodologies and tool sets, as well as different social arrangements for effecting improvements.

How improvement science was brought into, organized and applied in healthcare systems has influenced the development of the NICs model in education. Leaders at Carnegie started studying improvement in healthcare in 2008, when they encountered the work of the Institute

of Healthcare Improvement (IHI), an independent, non-profit organization dedicated to improving the quality, outcomes and value of healthcare worldwide.

Two organizing structures used by IHI were thought to be particularly applicable to what the developers of NICs had in mind for improving education systems. These were the IHI's *Model for Improvement* and the *Breakthrough Series Collaborative*.

Figure 3 shows IHI's adopted *Model for Improvement* as a key framework for organizing all improvement activities in healthcare projects. The framework is composed of three fundamental questions:

- (1) What are we trying to accomplish?
- (2) What changes can we make and why?
- (3) How will we know that a change is an improvement?

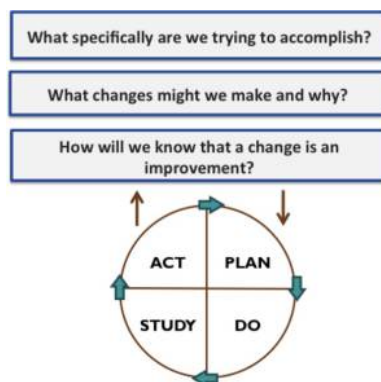
These questions are combined with the Plan-Do-Study-Act (PDSA) cycle as the way to iteratively test ideas in practice to build knowledge.

The PDSA cycle[2] part of the framework has a long history in improvement science as the way that practitioners engage in the “dynamic scientific process of acquiring knowledge” (Shewhart, as quoted in Moen and Norman, 2010). It was originally created by Shewhart (1939) – a physicist, statistician, engineer and Deming’s mentor at Bell Laboratories. The tool has evolved over the past century, with the current four elements (and associated name) being articulated by Deming in 1993 (for a more complete history of the PDSA cycle see Moen and Norman, 2010).

The four elements of the PDSA cycle became shorthand for:

- (1) planning a change and a way to test it;
- (2) carrying out the change and test the same on an appropriate scale;
- (3) studying the results; and
- (4) acting upon the knowledge gained.

This last item could include adapting the change and running the cycle again, or adopting the change and running another cycle (perhaps at a larger scale) or abandoning ideas that were



Source: Adapted by Langley *et al.* (2009)

Figure 3.
The improvement
framework used by
NICs

found to be ineffective. The *quality improvement cycle* is depicted as continuous, with learning from previous cycles incorporated into subsequent ones.

The PDSA cycle was augmented with the three fundamental questions by Gerald Langley, Kevin Nolan and Thomas Nolan of Associates in Process Improvement (API) in 1994. API is an intellectual trust dedicated to working with leaders, teams and organizations to improve products and services, as well as to build others' capacity to continuously improve in the healthcare sector (Langley *et al.*, 2009). Many members of the API worked directly with Deming, and over the past two decades API has been largely responsible for shaping the improvement methodologies adopted by IHI.

Drawing on this body of work, Carnegie envisioned NICs as also engaging members in asking three disciplined questions. These questions are slightly reworded to fit educational organizations and their social contexts. For example, there is greater emphasis on the "and why" component of question two. It is this "and why" that leads to predictions – an essential aspect of scientific inquiry and one that is very often missing in educational design, research and development thinking. They are then followed by the utilization of PDSA cycles to guide inquiry into specific problem areas so as to engender continuous quality improvements toward desired outcomes. This basic process lies at the core of driving improvement efforts in networks.

The *Breakthrough Series Collaborative*, with roots in the collaboration between the API and IHI, also influenced the NICs model development. The *Breakthrough Series Collaborative* involves the concept of a short-term learning system that brings together a number of teams from diverse settings and contexts to focus on a shared area for making improvements.

Key elements of a *Breakthrough Series* include:

- choice of a healthcare issue that is "ripe" for improvement;
- recruitment of 5 to 15 experts (based on subject matter and area of clinical practice) as a part of the learning collaborative;
- enrollment of organizations and teams to join the learning collaborative;
- learning to test changes and carry out improvement work;
- face-to-face learning sessions in which teams and experts consolidate learning and exchange ideas;
- action periods during which teams test and implement changes in their local setting;
- measurement and evaluation throughout the entire collaborative to enable teams to track the progress and monitor improvements in the system while implementing changes (IHI, 2003); and
- summative decision-making regarding improvements achieved, and dissemination of publications to document results and lessons learned.

An illustrative description of breakthrough collaboratives is shown in Figure 4.

To sum up, improvement science is a broad field that encompasses a wide-range of tools and methodologies to support improvement of processes and outcomes through organizational learning. Deming's system of profound knowledge was an early articulation of the range of knowledge and capacities needed to achieve real reforms. The contours of the field evolved over the course of his career, and continually evolved as the field accumulated greater knowledge of how to drive quality improvement practices in various organizational systems and fields of practice. The NICs model, similarly, draws upon a wide range of

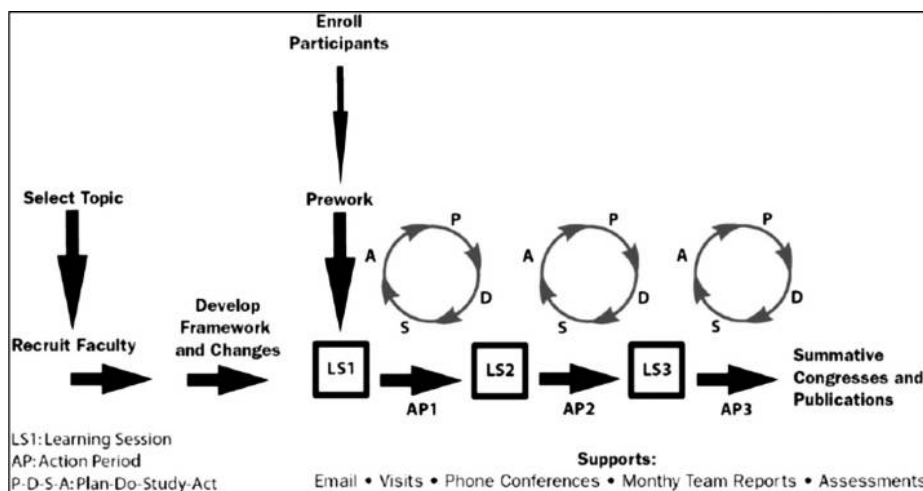


Figure 4.
IHI's breakthrough
series collaborative

improvement tools and methodologies to guide the learning of a given network's members in educational systems.

History of the Carnegie improvement model in education

In 2008, Anthony Bryk and Louis Gomez argued for an alternative research and development infrastructure in education, one that would bring together academic, practical and commercial expertise, and be focused on school improvement and solving common problems of practice embedded in the day-to-day work of teachers and students. They asserted that the achievement of ambitious educational innovations, such as more rigorous teaching and learning standards, required a diverse collegueship of researchers, clinicians and social entrepreneurs. According to Bryk and Gomez, these sectors could collaboratively identify problems of educational practice, design solutions to these problems grounded in a working theory of practice improvement, test designed solutions and systemically refine and adapt them.

In 2011, Bryk, Gomez and Grunow expanded upon the above reconceptualization of the functions of the educational research and development enterprise and outlined how the work of practice improvement might be carried out through NICs. They positioned structured networks of people as the means to organize the diverse types of expertise that [Bryk and Gomez \(2008\)](#) had earlier suggested were necessary to solve problems of practice. Drawing upon ideas from Englebart's "networked improvement communities" and Deming's "improvement science" to imagine how networks would be structured, they postulated that NICs could function as design communities to facilitate collaborative innovation. NICs, in their view, are also learning communities that facilitate intra- and inter-institutional learning and develop agency for engaging in improvement work in education systems, complete with shared aims, measureable goals, common measures and a shared theory of improvement. Carnegie's work in this area, including the melding of improvement science and networked scientific activity, is comprehensively presented in *Learning to Improve: How America's Schools Can Get Better at Getting Better* ([Bryk et al., 2015](#)).

Under Bryk, the Carnegie Foundation adopted a "learning-by-doing" orientation to improvement work in education ([Bryk et al., 2011](#)). As such, the first NICs supported by the Foundation were launched in 2010. The Community College Pathways NIC (now called the

Carnegie Math Pathways, or CMP) represents a partnership between the Carnegie Foundation, the Bill and Melinda Gates Foundation, William and Flora Hewlett Foundation, the Kresge Foundation, the Carnegie Corporation of New York and the Lumina Foundation. The CMP program is organized around two college “pathways” that aim to improve students’ progression through developmental mathematics at community colleges (van Campen *et al.*, 2013). Over 60 per cent of the 14 million community college students are required to take at least one or more developmental mathematics courses before becoming eligible to enroll in college credit courses. However, 80 per cent of these students fail to successfully negotiate these developmental gateways. The pathways NIC comprises community college faculty, improvement specialists, content experts and educational researchers, all engaging in networked improvement science concepts to enhance teaching processes and learner outcomes in these settings (van Campen *et al.*, 2013).

A second NIC sponsored by the Carnegie Foundation, the Building a Teaching Effectiveness Network (BTEN) started as a partnership between the American Federation of Teachers, the Aspen Institute and the Carnegie Foundation to improve the systems in K-12 education districts that support new teacher development and retention. BTEN focused on the needs of new teachers in three urban districts, Austin (TX), New York City (NY) and Baltimore (MD), as they learned to teach, engage with colleagues and navigate district policies and procedures. The BTEN NICs included school principals, new teachers’ professional colleagues, district improvement advisors, substantive scholars and Carnegie improvement specialists.

For both of these NICs, Carnegie functioned as an integrative “hub”, the initiator of network activity and a catalytic force for the improvement work. In this regard, the Carnegie hub serves to build consensus within the NIC on problem specification, development of the theory of practice improvement and possible solutions (with a common language around these); encourage engagement with and enrollment in the NIC; develop norms of participation and structuring agents; and maintain an “analytic core” for data collection, management and analysis.

The learning that came from supporting both of these NICs led to the articulation of Carnegie’s Six Core Principles of Improvement (Figure 5), which serve to guide the improvement work in partner organizations. These core principles have largely been used to define what constitutes an NIC and guide their initiation and operation (see, for example, Russell *et al.*, in press, for a practical translation of the core improvement principles into a framework for NIC initiation).

Description of Carnegie’s networked improvement communities model

This section describes in detail the six core principles underlying the NICs model (Figure 5), detailing with examples how the model is expected to work in theory. Four questions are used to shape the discussion:

- (1) How are problems identified and thought about?
- (2) Where do solutions to these problems come from?
- (3) How does the NICs model enact improvements and warrant them?
- (4) How does the NICs model spread the knowledge?

Each is addressed below, in turn. This discussion references the phases of NICs as explicated in Figure 6.

How are problems identified and thought about? The driving motivation for the formation of a NIC is the desire to solve an important and persistent problem of educational practice. In

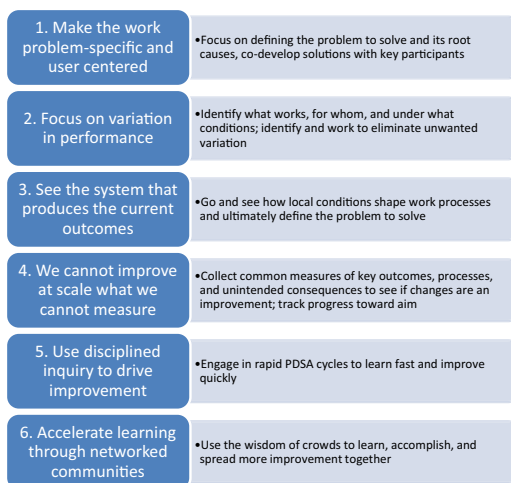


Figure 5.
Carnegie's six core
principles of
improvement

Source: Bryk *et al.* (2015)

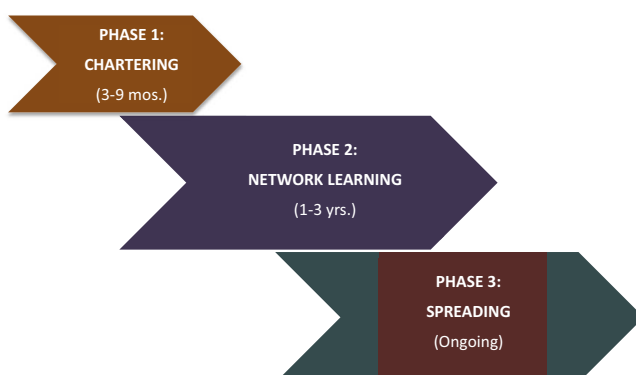


Figure 6.
The phases in a
maturing NIC

the Chartering Phase of an NIC – often lasting between three and nine months – an initiation team specifies the core problem to be solved and network members are united around it. Sometimes, the problem is first identified by an initiation team, and the network members are subsequently recruited. Alternatively, an existing community can go through a process of identifying a common problem to work on.

The first three of the six improvement principles (Figure 5) are particularly important in this chartering phase, as they guide how problems are identified, specified and thought about. Problems are typically specified as a quantifiable gap between the desired state of a system's performance and its current performance. Problems must also be framed as challenges, but ones that can reasonably be solved given the resources of the network.

As an example, the Carnegie's Math Pathways NIC was initiated around the problem of high developmental math failure rates in community colleges. At the time, policy attention was focused on the longer-term outcome of graduation rates for community college students. Working directly on improving overall student graduation rates is a very broad (often overly

vague) problem specification, involving many diverse stakeholders, programs and elements of community college systems. Broad problem-framing poses difficulties in implementing improvement science principles. Instead, a narrower focus on improving developmental math outcomes in students is a more reasonably specified problem, yet one that will certainly impact the challenge of graduation rates. For improvement work on this more tightly focused problem area, a network of math faculty, researchers, content experts and educational designers was convened.

In addition to identifying a problem in this chartering phase, NICs engage in activities to deliberatively arrive at a collective and deep understanding of the problem to be solved. Key in this phase is understanding the problem from the user's perspective (Principle 1, [Figure 5](#)), investigating variation in performance (Principle 2, [Figure 5](#)) and seeing the system that is producing current outcomes (Principle 3, [Figure 5](#)).

The NIC approach is not prescriptive in terms of any particular tool or methodology that networks should use to enact each of these principles. Rather, it promotes a collective investigation into the problem at local sites and highlights the importance of the resulting common understanding of the problem to guide the work of the NIC.

How could Principle 1, *Make the work problem-specific and user-centered*, be applied? A commitment to being "user-centered" involves looking closely at the problem from the perspective of users and those whose work it impacts. Teachers and school personnel are experts who are simultaneously most knowledgeable about local conditions and challenges and, therefore, able to contribute to identifying and implementing changes necessary to improve work outcomes. To this end, the model involves teachers and school personnel as primary users in problem specification. This is typically done through interviews with them, eliciting their perspectives and observing them in practice. The emerging field of user-centered design has produced many tools and methodologies that can be used for this purpose (e.g. journey maps, empathy interviews, fly-on-the-wall observations, etc.).

Principle 2 in [Figure 5](#) deals with the need to *Focus on variation in performance*. With the assumption of systems attribution in mind, investigations into variation in performance are another key aspect of identifying and understanding problems of educational practice. Two types of variation are of interest here: process and outcome variation. Process variation consists of the implementation of processes that either conform with or deviate from the expected plan of operation, or the working definition of "quality" (e.g. method of grouping students by reading ability). Outcome variation is of concern when it consists of undesirable fluctuations in educational outcomes (e.g. observed differences in achievement or gaps in racial groups).

Differences in process execution *per se* are not construed as negative (particularly not in cases where they are the consequence of integrative adaptation and have been tested and warranted as improvements). Exceptions are when they fall short of an articulated operational definition of quality (encountered in NICs as deviations from accepted design principles) and lead to undesirable variability in outcomes. System outcomes and processes may unproductively and undesirably vary over time, for groups of students, across grades, school levels or schools, or even among teachers.

Investigations into variation in performance could involve looking at the variation in outcomes within and across districts, schools, classrooms or subgroups of students in an educational system. These investigations inform where limited improvement resources can be targeted to produce the biggest benefit. They can also identify positive outliers that can be investigated further to better understand how to solve the targeted problem.

Principle 3 in [Figure 5](#) deals with *Seeing the system*. The physician Paul Batalden, considered one of the founding fathers of the movement to improve health care quality,

captured the essence of the system's role in failure in the now popular quote: "Every system is perfectly designed to get exactly the results it gets". In NICs, problems are assumed to be attributable to "the system", defined as the interactions between people, tools and materials, and work processes intended to produce a common goal within an organizational entity. This is in sharp contrast to the way in which many educational reform efforts are viewed, attributing outcomes to the individuals most immediately connected to the target processes. Without accounting for the whole system, individual performance is assumed to be influenced, even determined by a simple logic, where a program or a teaching practice might be expected to directly lead to a student outcome. With a systems approach, even failures due to lack of individual worker capability or knowledge can be re-conceptualized as failures of the system that are correctable by providing workers with the capabilities, knowledge and support to successfully perform their roles within the system.

According to this understanding of system performance, when a problem occurs, (e.g. poor student outcomes in a school), the leadership has the role and responsibility to investigate systems-based causes. This involves trying to pinpoint the interactions among structures, work processes and norms that are producing the current outcomes. Such investigations result in the identification of high-leverage processes that explain current low performance or undesirable variations in performance. These "high leverage" processes are drivers that act as significant levers in reducing unwanted variability and achieving desired aims. These, therefore, become important as targets of improvement efforts.

There are a number of tools that have a long history in improvement science that can be drawn upon to guide the processes of "seeing the system" and summarizing the resulting community learning. Results of problem specification and systems investigations lead to a shared theory of practice improvement (often expressed as a *driver diagram* – see below) that then helps the community decide where and how to focus their improvement efforts.

Where do solutions to these problems come from? One of the defining features of NICs is that they work on a common, well-specified aim and engage in coordinated, collective and collaborative action in pursuit of that aim. Solutions to problems are anchored through a working "theory of practice improvement" and represented in a visual tool called a "driver diagram" that identifies specific interventions for making continuous improvements and attaining the aim. The purpose of a driver diagram is to identify specific changes most likely to succeed and to identify where and how these changes might best influence the system and its outcomes.

In the chartering phase, the network initiation team creates a first version of the driver diagram for the NIC. In creating a theory of improvement, the team decides which aspects of the problem it will take on and uses the problem investigation as well as practical and content experts to decide where to focus their improvement efforts. The team then establishes a specific aim with a deadline for its accomplishment, sets a measurable improvement goal and ensures that it is testable in practice settings. With that aim in mind, the network identifies actionable interventions, called primary drivers, that are hypothesized to maximize the desired change in the system. These primary drivers are elaborated into secondary drivers, representing the specific places in the system where actions can be taken to impact desired performances. For example, concerns about the instructional system offered to struggling students (a primary driver) might be expected to lead to modifications in curricular conceptions and expressions as well as changes in specific teaching practices of teachers (secondary drivers), which would then likely lead to improved learning outcomes in students with the greatest learning gaps (targeted aim expressed as measurable learning outcomes). Secondary drivers might be relational norms, processes of practice or organizational structures that are believed to influence the primary drivers that they address.

Finally, the driver diagram should include a set of detailed change ideas, supported by extensive research-based evidence, observations and clinical expertise thought to impact the secondary drivers. Change ideas result from either adopting, adapting or inventing potential improvements that can be tested and monitored with regard to how they impact each related driver, the interconnections between them and ultimately the targeted aim (for more information on driver diagrams, see [Bennett and Provost, 2015](#); [Bryk et al., 2015](#)).

In the NICs approach, the change ideas on the driver diagram could come from at least five distinct sources: translations of scholarly research, culling of practices from others who have solved similar problems, design partnerships, network analytics or the insights and expertise residing in the network itself. While all NICs launch their improvement efforts with an initial driver diagram, they vary in how completely and well specified the starting solution-set is. The developers of the NICs approach have assembled a number of relevant tools to facilitate application of this step for improvement practitioners.

Finally, solutions emerge from the improvement work of the NIC itself. As multiple actors engage in solving problems locally, the changes that work in one place get picked up and tested across multiple contexts. Those changes that accumulate an evidentiary base along with explicit knowledge about how to use them in various contexts become common practice across the network.

Over the life of an NIC, the community moves from a provisional or working theory of improvement – to a set of evidence-based practices called a “change package”. This change package serves as a clinical knowledge base and is an important outcome of a NIC’s improvement efforts. The change package can then be used as a starting place for other organizations and networks, as they focus on similar problem areas and seek to address similar aims.

How does the networked improvement model enact improvements and warrant them? Once the chartering phase sufficiently completed for initiation, the NIC then moves on to developing improvement knowledge ([Figure 6](#)). Disciplined inquiry (Principle 5) and practical measurement systems (Principle 4) in [Figure 5](#) are key resources to help the community learn which changes work, for whom, and under what conditions. Each is now discussed.

An important feature of NICs is Principle 5, *Use disciplined inquiry to drive improvement*. This idea is essential to the application of any form of improvement science. To ensure and continuously improve quality of an entity, NICs must inform, test and warrant knowledge development through the use of explicit forms of disciplined inquiry. This can mean the application of any of many methodologies. What is important is that all involve methodologies that are (or can be) widely understood, that all discipline the research activity and its execution and that all can be rendered public to permit broad understanding, critical assessment and, when desirable, replication of procedures and findings. This last point is extremely important to the goal of knowledge production achieving scientific status. Replication of outcomes of a change intervention across contexts is the gold standard of improvement research, just as the attribution of a specific outcome to an identified cause under given conditions is the gold standard of traditional experimental research for theory-building.

While many methodologies can legitimately qualify as disciplined inquiry in an NIC (and many should as is appropriate to the knowledge needs and research questions), PDSA cycles predominate, as they also uniquely address the design-based use of iterative testing to examine and warrant changes.

As described above, most NICs to date use PDSA cycles to guide learning about specific changes in the driver diagram. As seen in the historical section of this article, the PDSA Cycle

is an iterative process of continuous learning, with each cycle feeding into subsequent cycles. It constitutes a method that grows knowledge through making predictions, introducing changes, testing them, reflecting on their consequences and acting on that information. During the *Plan* phase, the improvement team defines the change or intervention to be introduced, makes and records predictions about what will happen, designs a way to test these predictions (initially on a very small scale) and defines appropriate measures for learning through that one cycle. The actual recording of predictions is important here, as it compels team members to make their assumptions explicit and to compare actual outcomes with predicted ones. It not only addresses the threat of attribution bias in later interpretation of results but also establishes the potential for disconfirmation, which is so important to disciplined inquiry of this sort.

In the *Do* phase, the team implements the change, collects data on relevant indicators identified in the *Plan* phase and documents observations. Following through on the data collection plan is important in determining whether the change constitutes an improvement in subsequent phases. During the *Study* phase, the data are analyzed according to the measures taken, predictions are compared to what actually transpired and hypotheses are revised for future consideration, as necessary. In the final *Act* phase, the team collectively decides what to do next based on the learning from the cycle. The change can be abandoned, adapted and retested, or adopted for further testing in expanded form, or, if inconclusive, the cycle can be rerun to collect more data. Thereafter, future cycles are run based on the learning acquired during the previous cycles. Each of the PDSA phases is essential, and taken together, they represent a high degree of procedural rigor when introducing and enacting improvements.

In NICs, the scale at which changes are implemented and assessed depends on the confidence one has in any particular change idea and the level of readiness of people to implement the change. In the early stages, changes are often tested on a very small scale, as small as one classroom in one school. As testing cycles continue and changes are refined and potentially expanded, “warrants” build systematically under increasingly diverse sets of conditions and complexity levels, often – and purposefully – to track where the innovation is likely to fail. Replication of impact strengthens the warrants in this way. Common measurement systems across sites enable NICs to have a common way to assess whether a change is an improvement.

The improvements that are made in NICs are guided by its theory of practice improvement, which complements information gleaned from traditional scientific literature generated through Research and Development (R&D) work. Through R&D efforts, researchers can identify potentially effective specific solutions for problems in context. NIC practices examine more broadly if a specific improvement intervention will work in many different contexts, or whether and how it can be adapted to succeed in particular local contexts. This improvement knowledge informs *how* to implement practices successfully. The knowledge produced through disciplined forms of research in NICs warrant that certain ideas provide impact across contexts. Through this activity, the NIC’s theory of practice improvement evolves.

Principle 4, *We cannot improve at scale what we cannot measure*, emphasizes the need for NICs to identify indicators of success and methods for measuring them. NICs collect common measures to assess whether and where improvements are happening. These measurement systems are specifically designed around the NIC’s theory of practice improvement to assess or inform the change efforts. This is in contrast to other uses of measurement in education that are more appropriately designed to serve either research, accountability, or other decision-supporting purposes.

Measurement for improvement in an NIC is typically centered on two areas of focus: the assessment of the *aggregate impact* of the efforts to improve or on measures that attend to more *individual impacts*, or iterative tests of the effects of specific change interventions. Additionally, with regard to the aggregate progress toward the NICs aim, measurement concerns itself with both *leading indicators* (those that assess immediate or short term impacts of collective improvement efforts) and *lagging indicators* (those that assess the more distant outcomes embodied in the aim). In this way, progress toward the grand aim is closely monitored.

It should be noted that a measurement system of leading and lagging indicators also provides for analyses that detect and study unwanted variation in performance (as might suggest areas for further improvement efforts), as well as unanticipated positive deviants (which suggest places to study for potential improvement ideas). In this way, measurements of unexpected variation in outcomes that qualify as impact measures commonly also are used as improvement measures. In summary, in addition to measures of effectiveness of the collective efforts of the NIC, improvement work in NICs is informed also by the measurement of potential improvements.

NICs also incorporate a “family of measures” that explicitly support the logic of assessing some change intervention toward making an improvement in given systems. Such a family of measures includes three components paralleling the logic of improvement: process measures, outcome measures and balancing measures. First, we need to know that the planned change was implemented as we intended. This is done by applying process measures. Second, we need to know that the predicted beneficial impact was realized, which is assessed by outcomes measures. Third, we need to know that the change causes no harm elsewhere in the system. Balancing measures serve this function by focusing on outcomes or processes that are related to, but not the direct target of, some change intervention to assess any potential unintended consequences of the improvement work. Only when these three conditions of a family of measures are met [i.e. that the change is implemented as intended (process measures), that the predicted beneficial outcomes are realized (outcome measures) and no detrimental consequences are observed elsewhere in the system (balance measures)] do we have an evidentiary basis for asserting that some change is an improvement.

Together, Principle 5 (disciplined inquiry) and Principle 4 (implementing measurement systems) provide evidence that shapes the NIC’s working theory of practice improvement. Changes that work well across particular or varied contexts are warranted as improvements in the driver diagram; those that do not are either adapted for further investigation or removed. In practice, an NIC can see whether it is making progress toward key levers and toward ultimately achieving the aim.

How does the networked improvement communities model provide for the spread of knowledge? *Accelerate learning through networked communities* is Carnegie’s sixth improvement principle (Figure 5). It highlights the coordinated collective effort to address the aim as well as the dissemination of improvement practices that work, but alludes to many inter-dependent functions of networks collaboratively pursuing improvement science. These include providing a ready source of potential solutions to the problems of focus, accessing the forms of expertise necessary to address the aims set out with the community, providing varied contexts in which to test changes and develop their warrant as improvements and *assisting with the spread and uptake of improvements and learning*. It is the last of these that is focused upon here.

With improvement work conducted in the context of a structured NIC pursuing a commonly held aim, the participation structures are oriented toward diffusing knowledge between individuals, within organizations and between organizations. While the model

explicitly plans for such diffusion, it emphasizes the “adaptive integration” of innovations into local contexts (through the use of improvement science methodologies), rather than rote adoption and implementation with fidelity. In other words, a central question posed by the method is whether and how interventions can be made to work in the hands of diverse individuals working under varied conditions? Such concerns are not externalities; rather, they are central concerns to solve and are encapsulated in Core Principle 6.

NICs differentiate between spreading and scaling improvements – with the former referring to bringing improvements to new organizations or new settings and the latter referring to taking improvements – from small beginnings within an organization (i.e. one classroom) to the scale of the organization (i.e. all classrooms). NICs then address the conditions that make the improvements permanent, thus institutionalizing them. Both spreading and scaling improvements require a number of functions that, in NICs, are facilitated by a “hub”. These functions include improvement teaching and coaching, network initiation and development, data analytics, innovation design, knowledge management and collaborative technology to support collaborative action as well as spread knowledge. The NIC itself facilitates both the spread and scaling of its improvement work, which embodies two interrelated types of learning frameworks.

Diffusion occurs when networks engage with practical functions to facilitate coherence of work and shared knowledge of innovations. Network activities that involve collaboratively defining the problem, conducting a root cause analysis and articulating a working theory of practice improvement are among the initial steps toward spreading knowledge and expertise throughout the network. Regular network face-to-face meetings and conference calls are routinely held to share work, findings and observations. Networks also use interactive online tools that enable collaboration and give members access to findings from others’ cycles of inquiry. Shared data collection and analysis allow all network members to understand and track how the network is progressing toward its aim and to monitor process and balancing measures. In an NIC, this is augmented by the spread of knowledge (using all these tools and activities) about *how* to implement improvements effectively, reliably and at scale. All of this activity is orchestrated in the approach by the network hub, whose job it is to ensure that the network’s capacity to reach its aim (and to close the gap between its aspirations and current performance) increases over time.

A demonstration case of the networked improvement communities model in practice: improving teacher effectiveness in the Austin Independent School District, Texas

Context

The Austin Independent School District (AISD) began working with Carnegie in the summer of 2011 as part of the Foundation’s BTEN network. At the time, the network also included Baltimore Public Schools and New Visions, a charter management organization in New York City. The BTEN network was designed to collectively work to improve the experiences of and support for new teachers in these districts. At an off-site retreat between academic years, the Austin team coalesced around the problem that portion of the driver diagram that suggested *new teachers needed to be supported and retained by fostering ongoing professional development and growth in specific, targeted areas of need*. To achieve this driver that was believed to impact the NIC *aim*, the team decided that all new teachers in the district, regardless of the school they worked in, should *receive timely, frequent, actionable and coherent feedback from their supervisors and others who interacted with them*. This decision on the *change intervention* was anchored in the BTEN working *theory of practice improvement*: for school districts to increase the effectiveness of new teachers and encourage

their retention, high-quality feedback processes between teachers and principals was important in targeted areas of need.

Intervention design and small-scale testing

The AISD team created a prototype feedback protocol to be used by school principals when having formative, professional development conversations with teachers (Hannan *et al.*, 2015). After nearly 30 min of debate about the pros and cons of various protocol prompts and themes, ideas for a teacher feedback protocol emerged.

David Kauffman, a principal in a K-5 school, volunteered to finalize the design and test it as the first version of a change intervention with a second-year teacher. Offering to both a prototype protocol based on the group discussions up to that point (Figure 4), he proposed to test the protocol on a very small scale, with just one teacher and in the presence of others in the room. Kauffman jotted down six conversation prompts based on the group's discussion, and then validated these with the group.

The group then formally predicted the outcomes of the test of a PDSA cycle. The goal of this first test was simply to learn whether feedback tied to a specific professional development need for a teacher would result in two outcomes:

- (1) the identification of a clear focus (or problem) area for teacher development; and
- (2) some informal, data-based documentation that the teacher felt supported at the end of the "feedback" conversation, or change intervention.

The co-constructed measures were a brief practical measure (survey) of the new teacher's response to the feedback as being timely, constructive and actionable; and an independent assessment by district content and professional development experts regarding the extent to which the feedback addressed issues consistent with the district's vision of effective teaching.

Testing the change intervention on a larger scale

The initial PDSA cycle resulted in substantial learning and revisions. The NIC team decided it was ready for scaling up the change intervention to an authentic setting in the larger system (i.e. in an Austin district school). Kaufman volunteered and tested the teacher feedback prototype protocol four times in the first month of the school year, once with each of his four new teachers, representing four independent PDSA cycles.

Studying *variations* and further developing the *change intervention*, the team learned various things from each round of testing. Perhaps most important was that the protocol itself was necessary and useful as a guide for the teacher's supervisor (i.e. even an experienced principal involved in the protocol development needed some standardized practice prompts).

Below is the AISD Teacher Feedback Prototype Protocol for Initial Support Conference by School Principals:

- build rapport with teacher;
- discuss what is going well in classroom practices;
- describe available support structures for teachers on the campus;
- discuss biggest practice-related challenge at the moment and select a development area as the problem of focus;
- co-construct performance indicators of success;
- discuss next steps;

- schedule a time for the next coaching and feedback conference; and
- thank the teacher for his/her time.

In the same iterative manner, using PDSA methods, the AISD team devised an initial, standard three-step process for providing feedback to new teachers:

- (1) initial conversation between the principal and the teacher;
- (2) follow-up support from the instructional coach; and
- (3) observation and feedback conversation with the principal to assess progress toward a specified professional target.

Each of these three conversations (two with the principal, one with the instructional coach) were supported by a protocol (i.e. structured conversation prompts). The measurable indicators of performance set by the NIC included:

- independent review of the content of feedback by district experts to ensure its coherence with its vision of effective practice;
- surveys of observed teachers regarding their assessment of the process as supportive of their growth and development as well as the timeliness, focus and actionability of feedback given; and
- inspection of follow-through plans to ensure that they are actionable and invoke the necessary supports to act upon them.

The testing process for this initial feedback structure was then expanded to five schools that Austin team-leader Laura Baker strategically chose. These school principals were close colleagues and were already meeting once a month, providing an easy structure for, and goodwill toward, this emerging improvement approach.

Several sources of *variation* in implementation of the change intervention and its testing, surfaced. The schools constituted different organizational contexts (e.g. high schools, elementary schools, varying sizes of administrative teams and some with coaches). During the initial testing phase, principals agreed that a two-week feedback cycle was ideal (i.e. that no new teacher would go longer than two weeks without observation and feedback); but they themselves could not provide this much support (this was learned through testing under the local conditions/constraints of other schools). Thus, some schools tested a case manager role to provide feedback to new teachers and orchestrate the two-week cycle. Principals were still involved in the initial conversation, but case managers would be responsible for the feedback process. In addition, a support provider would work with each new teacher between feedback conversations to ensure there was a follow-up action on the feedback given and that established plans were fulfilled.

Adding roles complicated the feedback process and necessitated further testing of ideas about how to coordinate between principal, case manager and support provider. One of the five schools, a large high school, adapted an existing online tool to track the different interactions with new teachers. Baker then tailored the tool to match the conversation protocol and provided it for the other four school sites to test. Emphasis was placed on continued learning and trust in the practitioners as improvers. In light of their reflection and adaptation, the district office did not push for implementation of partially developed ideas too quickly. In addition, the schools, through iterative testing, discovered the usefulness of a short coordination meeting between principals, case managers and support providers to review the progress of new teachers.

These initial two phases of testing, first at Kaufman's school and then at five different sites, revealed four change ideas that were designed, tested and refined repeatedly to establish a standard method for providing quality feedback. The four *change intervention* ideas were conversation protocols, new personnel roles, online tracking tool and short coordination meetings, as appropriate. In addition, the team and testing sites observed a need and the importance of creating common definitions. For example, the fifth prompt in the initial support conversation directed principals and new teachers to co-construct indicators of success. During the second phase of testing at the five schools, some principals skipped this step altogether, and others landed on indicators that were not well specified, and therefore provided little developmental information for new teachers. The team created a common definition and added a sentence stem to the fifth prompt that directed principals to be more specific. Teams then reviewed indicators of success in coordination meetings.

Scaling-up change ideas to more schools

The third phase involved testing this standard feedback process in 13 schools that constituted one of 14 "vertical teams" (a group of elementary and middle schools that fed into a single high school) in the district. During this phase, the district-level focus moved from refining the process of feedback for new teachers, to supporting administrators, case managers and support providers to better provide the process reliably within their schools. The AISD team created videos of feedback conversations to train administrators in the protocol; tools were developed to help support teachers and principals to select appropriate and well-specified indicators of success, further refining operational definitions about how to accomplish this improvement.

School-level teams, are still using the PDSA cycle to improve on the four elements of the feedback process and to adapt the process to their particular context. Langford Elementary, one of the sites involved in the third phase of testing, began using the standard feedback process during the 2013-2014 school year. The support provider at Langford works collaboratively with the principal, case manager and new teachers to design and test a number of innovations to make the two-week feedback cycle more user-friendly and ensure the timeliness of feedback. For example, the team is currently developing a checklist for the feedback conversations to ensure the list of prompts is used, and to add specificity to the prompts.

To measure the degree to which administrators and school leaders are collaborating with teachers during these conversations, the Langford team started a new PDSA Cycle. New teachers fill out a single-item questionnaire rating the degree of collaboration on a three-point scale. These questionnaires are placed anonymously in a box, collected by principals, then reviewed by administrators. The Langford team wanted to learn not only whether the degree of collaboration during feedback conversations was consistent across teachers but also whether the data they were interested in could be gathered quickly and easily for practical use.

Beardsley conducted several PDSA Cycles to determine the best means of scheduling feedback conversations between administrators and new teachers. Her first change idea and testing cycle involved sending spreadsheets to administrators twice a week to notify them of the status of their respective feedback cycles, with the colors green and red used, respectively, to signify whether a cycle was on schedule or behind. A subsequent test involved blocking off time on administrators' calendars to meet with BTEN teachers and developing a meeting protocol in which administrators enter data into the online tools at the end of the feedback meeting. Note that these learning cycles are focused on the local context, answering the question: "How do we make this work here?"

Disseminating networked improvement community's learning and knowledge gained

To facilitate learning across school sites, the Carnegie Foundation hosted semi-annual meetings in the spring and fall during which all 13 schools interact, share learnings and identify problems in a structured way. Each site-based support provider also has regular meetings with one of the district improvement specialists. These specialists have access to other school sites and provide examples of work undertaken and solutions developed at other schools. In addition, AISD school and district improvement leaders have regular coaching calls (both site specific and cross-site) with Carnegie BTEN staff.

Case summary: how the networked improvement communities model's core principles were applied

While the improvement work is continuing and still incomplete, several of the NICs model's core principles are evidenced in the Austin demonstration case, as delineated below.

Principle 1. *Make the work problem-specific and user-centered*: In this case, the problem was identified and specified collaboratively by potential users/stakeholders of the NICs, especially the Austin school system. The key users, teachers and school principals, were the focus of, and direct participants in, the articulation of the change interventions.

Principle 2. *Focus on variation*. As described, several sources of variation were identified in early problem analyses and later recognized during PDSA cycles.

Principle 3. *See the system*. Early on in the problem definition and development of the theory of improvement, systems analyses led to the understanding that extant feedback systems were essential for both success and identification of areas where much improvement was needed. Subsequently, in designing and scaling up the change ideas from one teacher, to 4 schools, to 13 schools in progressive stages, the participants demonstrated that they "saw" the larger system and where the quality improvements in the targeted problem area needed to occur.

Principle 6. *Accelerate the learning*. Steps were taken to disseminate new knowledge and learning occurring through the NICs in the Austin case using the strategies and structures available to carefully and intentionally designed networks as a social architecture for developing and spreading new knowledge.

Conclusion

Carnegie's NICs model is still evolving. It combines theoretical ideas of improvement science and structured networks. The former is represented in the first five core principles of improvement science (Figures 1 and 3), and the latter is defined in the sixth principle. The tools referenced will continue to evolve over time (for a more complete treatment of the improvement tools and methodologies used by NICs, see Bryk *et al.*, 2015).

The Carnegie Foundation's operationalization of improvement science ideas borrows from and shares similarities with, a number of other methods. However, the requirement that improvement work be conducted in the context of formal networked communities represents a significant departure from other approaches described in this volume. Importantly, NICs embody the manner in which learning is accelerated in pursuit of a collective aim. They provide a way for improvements to travel from one classroom to another and from one organization to another, allowing for quality improvements to become more institutionalized and routine. They are also a way of accelerating network members' ability to test improvements, refine them and aggregate learning about how different actors can effectively implement improvements in various contexts.

The Carnegie approach places value on the differing perspectives and expertise of various stakeholders – teachers, researchers and educational leaders – bring to bear on persistent problems of educational practice. It emphasizes in equal measure the expertise of both

scholars and practitioners. In NICs, there are structures for these different stakeholders to share knowledge and collaborate toward shared aims. In this way, the method represents an attempt to redefine professional roles and identities as well as the relationships between these stakeholders, particularly among educational researchers, practitioners and innovators.

Notes

1. The entire set comprises networked improvement communities, design based implementation research, deliverology, implementation science, lean for education, six sigma and positive deviance.
2. The PDSA cycle is alternatively known as the “Deming cycle” or the “Deming Wheel”. Deming himself referred to it as the “Shewhart cycle”, as he learned about and adapted it from Walter Shewhart.

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A surrealist painting depicting a large, open book as a landscape. The pages are white and textured, with a yellowish-brown border. Several small figures of people are walking on the pages. One figure is walking on the top left page, another on the top right page, and a third on the bottom left page. In the center, a man and a woman are walking together, holding hands. The background is a deep blue with a textured, almost marbled appearance. The overall style is painterly and dreamlike.

Carnegie's Community- Engagement Classification:

Intentions and Insights

BY AMY DRISCOLL

Despite our commitment to community engagement, we had not previously compiled information about the many types and examples of community engagement that occur here. The self-study tells us that we have much to celebrate. It also provides us with a tool for analyzing where we can further increase our efforts.

—A small private college in the Midwest

The Carnegie process is now informing university-wide strategic planning and is being turned into a set of recommendations. It has revitalized attention to the core urban mission of the institution and created widespread energy to deepen community engagement.

—A large urban university on the East coast

Over the last few years, the Carnegie Foundation for the Advancement of Teaching has engaged in a comprehensive re-examination of its traditional classification system. The redesign stemmed from a concern about the inadequacy of the classification for representing institutional similarities and differences and its insensitivity to the evolution of higher education. In December 2006, the foundation announced the inaugural selection of 76 U. S. colleges and universities to be newly classified as “institutions of community engagement,” the first of a set of elective classifications intended to broaden the categorization of colleges and universities. Of those 76 institutions, most reported the kind of impact described in the opening quotations. The enthusiastic response to the new classification signaled the eagerness of institutions to have their community engagement acknowledged with a national and publicly recognized classification.

THE DOCUMENTATION FRAMEWORK

Before the first formal classification began in 2006, extensive efforts were devoted to developing a framework that institutions could use to document engagement with their communities. That framework was designed to:

- 1) Respect the diversity of institutions and their approaches to community engagement;
- 2) Engage institutions in a process of inquiry, reflection, and self-assessment; and

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3) Honor institutions’ achievements while promoting the ongoing development of their programs.

The development of the framework for this new classification occurred in three phases. The first consisted of consultation with national leaders and a review of the current literature on community engagement. The second phase was a review of current practices in documenting such engagement, such as those by Campus Compact, the Council of Independent Colleges (CIC), the National Association of State Universities and Land-Grant Colleges (NASULGC), and individual institutions. The third phase of development was an ambitious and informative pilot study with 14 institutions that had been identified as significantly engaged with their communities. Representatives from those institutions reviewed and critiqued an initial framework, tested it on their campuses, and made significant contributions to the final design.

In order to respect the diversity of institutions and their approaches, the term “community engagement” was defined broadly as “the collaboration between institutions of higher education and their larger communities (local, regional/state, national, global) for the mutually beneficial exchange of knowledge and resources in a context of partnership and reciprocity.” The documentation framework was also designed to accommodate institutional variations in philosophy, approaches, and contexts.

DOCUMENTATION PROCESS

Unlike Carnegie’s other classifications, which rely on national data, its new, voluntary classifications such as community engagement are designed to work based on documentation provided by the institutions.

To engage colleges and universities in a substantive process of inquiry, reflection, and self-assessment, the framework has two major sections: *Foundational Indicators* and *Categories of Engagement*. Applicants were asked first to document a set of *Foundational Indicators* in two categories: “Institutional Identity and Culture” and “Institutional Commitment.” These included both required and optional documentation. For example, one requirement of “Institutional Identity and Culture” was that “the institution indicates that community engagement is a priority in its mission” and provides relevant quotations from mission statements to demonstrate that priority, while the “Institutional Commitment” category required documentation regarding budget, infrastructure, strategic planning, and faculty-development efforts to support community engagement. Colleges and universities that were unable to meet the requirements of the first stage were encouraged to address these foundational indicators before seeking classification at a future date.

The second section of the documentation framework, *Categories of Engagement*, calls for data about, and examples and descriptions of, focused engagement activities in the categories of “Curricular Engagement” and “Outreach and Partnerships.”

To demonstrate curricular engagement, institutions were asked to describe teaching, learning, and scholarly activities that engage faculty, students, and the community in mutually beneficial and respectful collaboration, address community-identified needs, deepen students’ civic and academic learning, enhance the well-being of the community, and enrich the scholarship of the institution.

To demonstrate outreach and partnerships, they were asked to describe two related approaches to community engagement: first, the provision of institutional resources for community use in ways that benefited both the campus and the community and second, collaborations and faculty scholarship that constituted a beneficial exchange, exploration, discovery, and application of knowledge, information, and resources.

The requirements of both sections, when met, describe an institution deeply engaged with its community. The composite profile of these colleges and universities represents the best practices that have been identified nationally. The framework enabled participating institutions to assess the presence or absence of such practices, identify and reflect on both the strengths of and the gaps in their approaches, and strengthen their programs. Thus Carnegie began to achieve its intention to honor achievements while promoting ongoing improvement.

THE APPLICANTS

In April 2006, 145 institutions responded to the opportunity to be classified. Of them, 107 were accepted for the inaugural pool. They varied in size, type, programmatic focus, and location, and yet the pool was also limited enough to ensure a thorough and reflective review process. By the September 2006 deadline, 89 institutions had submitted full documentation. Those institutions that did not complete applications reported either that the documentation framework was more extensive than they had anticipated or that their approaches to community engagement needed further development before they could meet the requirements.

Responses from both the institutions that completed the application and those that did not affirmed that the process was substantive and required extensive reflection and self-assessment. In many cases, they reported that new questions and unexpected challenges arose as the framework asked them to describe areas of engagement that they had not previously assessed or even tracked on an institutional level.

A pivotal question for many campuses was how to define engagement for their institution and its community. Indiana University-Purdue University, Indianapolis, replaced “community engagement” with “civic engagement” to better reflect the institutional philosophy. North Carolina State University introduced its documentation with a broader definition of community than the Carnegie one, since campus/community discussions had expanded the concept of community beyond geographic boundaries.

In other cases, new tracking and assessment systems and strategies were developed and put into practice. For example,

Northern Kentucky University revised an existing annual survey to include elements of the classification framework, created an online version of the survey to strengthen an already strong response rate, and published the data in a well-disseminated institutional report.

Of the 76 colleges and universities that were finally recognized in the first classification, 44 are public institutions and 32 are private; 36 are classified (in Carnegie’s “basic” classification) as doctorate-granting universities, 21 are master’s colleges and universities, 13 are baccalaureate colleges, five are community colleges, and one has a specialized arts focus. Within and among those 76 institutions are varied approaches to engagement; diverse partnerships in terms of disciplinary focus, size, length of time, and purposes; and varying interpretations of community, both conceptually and geographically. Among them, five documented only a focus on curricular engagement, and nine focused their documentation on outreach and partnerships, while 62 institutions qualified for classification in both categories.

INSIGHTS FROM INSTITUTIONS NEWLY CLASSIFIED

One of the major strengths of the institutions that were classified as engaged with their communities was a compelling alignment of mission, marketing, leadership, traditions, recognitions, budgetary support, infrastructure, faculty development, and strategic plans—the foundational indicators of community engagement. For example, Portland State University’s motto, “Let knowledge serve the city,” was translated into budgetary priorities, an office of community/university partnerships, a consistent message from institutional leadership, and promotion and tenure guidelines that reward Boyer’s “scholarship of application.” Rhodes College’s mission of “translating academic study and personal concern into effective leadership and action in their communities and the world” was enacted with a new student-orientation program (“Memphis Connection”), a common theme in its news releases, a set of strategic imperatives, and student awards and honors for leadership.

This kind of alignment is critical if a significant change in mission is to be sustained and should be the goal of institutions that are in the early phases of community engagement. Such alignment can also serve as the object of self-assessments as more-advanced institutions mark their progress and identify areas for improvement in their commitment to community engagement.

Strong documentation of curricular engagement began with carefully crafted definitions and processes for identifying and tracking activities such as service learning or community-based learning. Those definitions and processes were indicators of the kind of ongoing and substantive discussion that innovations demand if they are going to be successful and endure. Examples of faculty scholarship were further evidence of the institutionalization of community engagement and of its being embedded in faculty roles and rewards, rather than being an “add-on” to faculty responsibilities.

For example, the University of St. Thomas in Minneapolis-St. Paul began its documentation with an extended definition of service learning and described how the scholarship of engagement was integrated into undergraduate as well as doc-

toral research. The university listed more than 60 examples of faculty scholarship related to curricular engagement, including refereed journal publications, book chapters, conference presentations, grants, and videos.

Community engagement in the area of outreach and partnerships took multiple forms—cooperative education and extension coursework, learning centers, institutional resource-sharing (libraries, technology, and cultural offerings), student volunteerism, and professional-development centers. Institutions with strong and long-term partnerships presented compelling evidence that their operation entailed collaborative and multi-faceted relationships among faculty, staff, students, and community partners.

Partnerships are complex and require new understanding and skills. The University of Alaska's innovative approach to partnerships illustrates those challenges. The university approaches partnerships with a model of "generating knowledge and practice" in the community through a process of collaborative "identification of problems and issues, gathering background data, grappling with meaning, establishing action or methodology to proceed, reflecting and analyzing the outcomes, and disseminating the results." Faculty-community scholarship with collaborative authorship and a focus on community issues and practices then emerges out of this work.

CHALLENGES

The areas in which institutions struggled to provide documentation offer as much insight as do their areas of strength. Those struggles occurred in two areas: assessing the community's need for and perceptions of the institution's engagement and developing substantive roles for the community in creating the institution's plans for that engagement. One successful institution, Chandler-Gilbert Community College, gathered data about community perceptions with a comprehensive approach that included a survey of community representatives, presidential meetings with community leaders, feedback from a community advisory council, a program-review process that probed community satisfaction, and databases that consistently recorded community/college activities and assessment information. The college reported that information from all these sources was used for planning and decision-making.

But most institutions could only describe in vague generalities how they had achieved genuine reciprocity with their communities. Again, community involvement requires new understanding, new skills, and even a different way of conceptualizing community. There are generally significant barriers left over from both internal and external perceptions of the campus as an "ivory tower," and those barriers must be addressed for authentic community partnerships to develop.

Another challenge for institutions was the assessment of community engagement in general and of the specific categories of engagement in particular. Strategies ranged from the simple recording and tracking of engagement activities to the assessment of student learning, community benefits, and other outcomes. But only six institutions could be specific about institution-wide student-learning outcomes resulting from community engagement. One such institution, California State University, Monterey Bay, has a well-crafted set of learning

outcomes related to community engagement that all students meet as part of their general-education requirements, as well as related civic-learning outcomes in each of the major programs of study.

A small minority of institutions maintain systems of institutional assessment, but most institutions rely on data from individual faculty projects, from course assessments, and occasionally from departmental reviews to evaluate their community-engagement approaches. Assessment in general has made less-than-satisfactory progress at most institutions, so it is not surprising that this indicator would be particularly challenging. But it is essential to conduct effective assessment to show that the extensive resources and time commitments required by community engagement are directed effectively, as well as to improve those engagement efforts.

A final challenge is the lack of significant support for faculty who are engaged in this work. Although all institutions reported some faculty-development support in the form of workshops, seminars, conference travel, and mini-grants, few documented that community engagement was a priority in their faculty recruitment and hiring practices. There were, however, exceptions: Rutgers University-Newark, for example, emphasizes professional work in its urban context—teaching and research focused on urban issues—in recruitment materials.

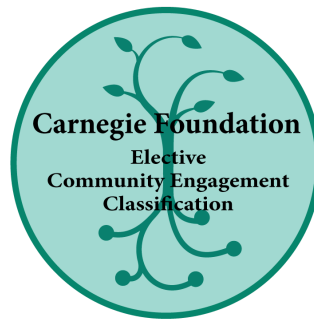
Even fewer institutions described changes in the recognition and reward system for promotion and tenure. Exceptions included Kent State University, with Boyer's scholarship of application recognized explicitly in its promotion and tenure guidelines, and Virginia Polytechnic Institute and State University's community-related scholarship examples, which include "outreach publications, presentations to community groups, and consulting."

In contrast, most institutions continue to place community engagement and its scholarship in the traditional category of service and require other forms of scholarship for promotion and tenure. Changes in long-standing traditions are not easily achieved, and the data from the newly classified institutions nudge us to accelerate efforts to this end.

All these areas of challenge offer insights to 2008 applicants for the new classification. They spotlight the work yet to be accomplished and call for increased attention to strategies for change.

CONCLUSION

The new elective classification for institutions that are engaged with their communities is an exciting move in Carnegie's extension and refinement of its classification of colleges and universities. The classification framework for community engagement has achieved its intention: to respect the diversity of institutional contexts and approaches to engagement, to encourage a reflective inquiry and self-assessment process that is practical and provides useful data, and to affirm good work while urging even better. The documentation process motivated institutions—even those with strong and deep commitments to community engagement—to develop and institutionalize their tracking and assessment systems and to engage with their communities in authentic reciprocal relationships. The national recognition accompanying the new classification thus has enhanced both the prominence and promise of community engagement in higher education. ☐



The Carnegie Foundation for the Advancement of Teaching Elective Community Engagement Classification

First-Time Classification Documentation Framework 2020 Classification

*Framework notes: To assist you in preparing your application, this framework includes additional guidance as to the purpose of certain application questions and the type of information that is expected in applicants' responses. This guidance is shown in **blue text** throughout the framework below.*

This Documentation Framework is intended to help you gather information about your institution's community engagement commitments and activities as you complete the 2020 Documentation Reporting Form (i.e., the application).

This document and framework is for use as a reference and worksheet only. Please do not submit it as your application. Only applications submitted through the online portal will be reviewed. All narrative responses are limited to 500 words each. A link to the application will be sent to institutions who request this framework between May 1 and July 1, 2018.

Data provided: The data provided in the application should reflect the most recent academic year. Since campuses will be completing the application in academic year 2018-2019, data should reflect evidence from AY 2017-2018. If this is not the case, please indicate in the Wrap-Up section of the application what year the data is from.

Use of data: The information you provide will be used to determine your institution's community engagement classification. Only those institutions approved for classification will be identified. At the end of the survey, you will have an opportunity to authorize or prohibit the use of this information for other research purposes.

Community Engagement Definition

Community engagement describes the collaboration between institutions of higher education and their larger communities (local, regional/state, national, global) for the mutually beneficial creation and exchange of knowledge and resources in a context of partnership and reciprocity.

The purpose of community engagement is the partnership (of knowledge and resources) between colleges and universities and the public and private sectors to enrich scholarship, research, and creative activity; enhance curriculum, teaching, and learning; prepare educated, engaged citizens; strengthen democratic values and civic responsibility; address critical societal issues; and contribute to the public good.

Community engagement describes activities that are undertaken with community members. In reciprocal partnerships, there are collaborative community-campus definitions of problems, solutions, and measures of success. Community engagement requires processes in which academics recognize, respect, and value the knowledge, perspectives, and resources of community partners and that are designed to serve a public purpose, building the capacity of individuals, groups, and organizations involved to understand and collaboratively address issues of public concern.

Community engagement is shaped by relationships between those in the institution and those outside the institution that are grounded in the qualities of reciprocity, mutual respect, shared authority, and co-creation of goals and outcomes. Such relationships are by their very nature trans-disciplinary (knowledge transcending the disciplines and the college or university) and asset-based (where the strengths, skills, and knowledges of those in the community are validated and legitimized). Community engagement assists campuses in fulfilling their civic purpose through socially useful knowledge creation and dissemination, and through the cultivation of democratic values, skills, and habits - democratic practice.

Applicant's Contact Information

Please provide the contact information of the individual submitting this application (for Carnegie Foundation use only):

- First Name
- Last Name
- Title
- Institution
- Mailing address 1
- Mailing address 2
- City
- State
- Zip Code
- Phone Number
- Email Address
- Full Name of Institution's President/Chancellor
- President/Chancellor's Mailing Address
- President/Chancellor's Email Address

I. **Campus and Community Context**

A. **Campus:**

Provide a description of your campus that will help to provide a context for understanding how community engagement is enacted in a way that fits the culture and mission of the campus. You may want to include descriptors of special type (community college, land grant, medical college, faith-based, etc.), size (undergraduate and graduate FTE), location, unique history and founding, demographics of student population served, and other features that distinguish the institution. You may want to consult your campus's IPEDS data (<https://nces.ed.gov/ipeds/Home/FindYourCollege>) and Carnegie Basic Classification data (<http://carnegieclassifications.iu.edu/lookup/lookup.php>).

B. **Community:**

Provide a description of the community(ies) within which community engagement takes place that will help to provide a context for understanding how community engagement is enacted in a way that fits the culture and history of the partnership community(ies). You may want to include descriptors of special type (rural, urban, conservative, liberal, etc.), size (population), economic health, unique history, demographics of community population served/employed, and other features that distinguish the institution and community(ies). For local communities, you may want to consult your census data.

II. **Foundational Indicators - Required Documentation.** Complete all questions in this section.

A. **Institutional Identity and Culture:**

1. Does the institution indicate that community engagement is a priority in its mission statement (or vision)?
o No o Yes

1.1. If Yes: Quote the mission or vision:

2. Does the institution formally recognize community engagement through campus-wide awards and celebrations?
o No o Yes

2.1. If Yes: Describe examples of campus-wide awards and celebrations that formally recognize community engagement:

B. **Institutional Assessment:**

1. Does the institution have mechanisms for systematic assessment of community perceptions of the institution's engagement with community?
o No o Yes

1.1. If Yes: Describe the mechanisms for systematic assessment:

The purpose of this question is to determine if the institution regularly checks with community members to assess their attitudes about the institution's activities, partnerships, and interactions with the community. We are looking for evidence of strategies and/or processes (mechanisms) for hearing community views about the role of the institution in community, including a description of how frequently assessment occurs, and who is accountable for managing the process. Responses should describe ongoing data collection mechanisms beyond the use of advisory groups or one-time community events. We expect a classified institution to demonstrate this practice as an historic and ongoing commitment. This question is not focused on data about specific engagement projects, programs or service- learning courses, or an individual's work in community settings. We are looking for a systematic, institutional process for hearing community perspectives.

2. Does the institution aggregate and use all of its assessment data related to community engagement?
☐ No ☐ Yes

2.1. If Yes: Describe how the data is used:

If you are using a systematic mechanism for hearing community attitudes, perceptions, and outcomes, please describe how the institution summarizes and reports the data. We also expect a description of how the information is used to guide institutional actions such as budgeting, strategic priorities, program improvement, and, where applicable, leads to problem solving or resolution of areas of conflict with community. A description of these actions or implications can take the form of lists, cases, anecdotes, narratives, media articles, annual reports, research or funding proposals, and other specific illustrations of application of the community perception and outcome data.

C. Institutional Communication:

1. Does the institution emphasize community engagement as part of its brand message identity or framework? For example, in public marketing materials, websites, etc.?
☐ No ☐ Yes

1.1. If Yes: Describe the materials that emphasize community engagement:

2. Does the executive leadership of the institution (President, Provost, Chancellor, Trustees, etc.) explicitly promote community engagement as a priority?
☐ No ☐ Yes

2.1. If Yes: Describe ways that the executive leadership explicitly promotes community engagement, e.g., annual addresses, published editorials, campus publications, etc.:

3. Is community engagement defined and planned for in the strategic plan of the institution?
☐ No ☐ Yes

3.1. If Yes: Cite specific excerpts from the institution's strategic plan that demonstrate a clear definition of community engagement and related implementation plans:

D. Institutional - Community Relations:

- 1.** Does the community have a "voice" or role for input into institutional or departmental planning for community engagement?

☐ No ☐ Yes

1.1. If Yes: Describe how the community's voice is integrated into institutional or departmental planning for community engagement:

The purpose of this question is to determine the level of reciprocity that exists in the institution's engagement with community, specifically in terms of planning and decision-making related to engagement actions and priorities. Please provide specific descriptions of community representation and role in institutional planning or similar institutional processes that shape the community engagement agenda. Community voice is illustrated by examples of actual community influence on actions and decisions, not mere advice or attendance at events or meetings. A list or description of standing community advisory groups is insufficient without evidence and illustrations of how the voices of these groups influence institutional actions and decisions.

E. Infrastructure and Finance

- 1.** Does the institution have a campus-wide coordinating infrastructure (center, office, network or coalition of centers, etc.) to support and advance community engagement?

☐ No ☐ Yes

1.1. If Yes: Describe the structure, staffing, and purpose of this coordinating infrastructure. If the campus has more than one center coordinating community engagement, describe each center, staffing, and purpose and indicate how the multiple centers interact with one another to advance institutional community engagement:

*The purpose of this question is to determine the presence of "dedicated infrastructure" for community engagement. The presence of such infrastructure indicates commitment as well as increased potential for effectiveness and sustainability. We expect a description of specific center(s) or office(s) that exist **primarily** for the purpose of leading/managing/supporting/coordinating community engagement.*

- 2.** Are internal budgetary allocations dedicated to supporting institutional engagement with community?

☐ No ☐ Yes

2.1. If Yes: Describe the source (percentage or dollar amount) of these allocations, whether this source is permanent, and how it is used:

The purpose of all the questions in this section is to assess the level of institutional commitment to community engagement in terms of dedicated financial resources. Please provide the amount or percent of total institutional budget that funds the primary investment and ongoing costs of the infrastructure described in B.1 as well as any other funds dedicated to community engagement, including but not limited to internal incentive grants, faculty fellow awards, teaching assistants for service-learning, scholarships and financial aid related directly to community engagement, and funding for actual engagement projects, programs, and activities. Do not include embedded costs such as faculty salaries for teaching service-learning courses in their standard workload.

- 3. Is external funding dedicated to supporting institutional engagement with community?**
☐ No ☐ Yes

3.1. If Yes: Describe specific external funding:

These funding sources may include public and private grants, private gifts, alumnae or institutional development funds, donor support, or federal/state/local government and corporate funds dedicated to community engagement infrastructure and/or program activities.

- 4. Is fundraising directed to community engagement?**
☐ No ☐ Yes

4.1. If Yes: Describe fundraising activities directed to community engagement:

Please describe institutional fundraising goals and activities pursued by offices of advancement, development, alumni, or institutional foundations that are focused on community engagement. Student fundraising activities in support of community engagement may be included.

- 5. Does the institution invest its financial resources in the community and/or community partnerships for purposes of community engagement and community development?**
☐ No ☐ Yes

5.1. If Yes: Describe specific financial investments and how they are aligned with student engagement strategy:

In this question, we are asking specifically about financial investments in community programs, community development, community activities/projects, and related infrastructure, often in the context of community/campus partnerships. Examples might be a campus purchasing a van for a community-based organization to facilitate transportation of volunteers; a campus donating or purchasing computers for an after-school program located in a community-based organization; a campus investing a portion of its endowment portfolio in a local community development project, etc. (Do not include PILOT payments unless they are specifically designated for community engagement and community development.)

6. Do the business operation of the campus as an anchor institution align with local economic and community development agendas through hiring, purchasing, and procurement?
☐ No ☐ Yes

6.1. If Yes: Please describe business operation practices tied to the local community:

This question is asking specifically about how the campus practices in the areas of recruitment, hiring, purchasing, and procurement align with and are an intentional complement to the institutional commitment to community engagement. This can include programs to encourage/support minority vendors, among many other practices. These institutional practices contribute to the context for successful community engagement.

F. Tracking, Monitoring, and Assessment

1. Does the institution maintain systematic campus-wide tracking or documentation mechanisms to record and/or track engagement with the community?
☐ No ☐ Yes

1.1. If Yes: Describe systematic campus-wide tracking or documentation mechanisms:

*The purpose of the questions in this section is to estimate sustainability of community engagement by looking at the ways the institution monitors and records engagement's multiple forms. Tracking and recording mechanisms are indicators of sustainability in that their existence **and use** is an indication of institutional value for and attention to community engagement. Keeping systematic records indicates the institution is striving to recognize engagement as well as to reap the potential benefits to the institution. Please use language that indicates an established, systematic approach, not a one-time or occasional or partial recording of community engagement activities. This approach will be demonstrated by means of a description of active and ongoing mechanisms such as a database, annual surveys, annual activity reports, etc. Do not report the actual data here. Here is where you describe the mechanism or process, the schedule, and the locus of managerial accountability/responsibility. You may also describe the types of information being tracked such as numbers of students in service-learning courses, numbers of courses, identity and numbers of partnerships, numbers and types of community-based research projects, etc.*

2. If Yes: Does the institution use the data from those mechanisms?
☐ No ☐ Yes

2.1. If Yes: Describe how the institution uses the data from those mechanisms:

For each mechanism or process described in E1.1 above, we expect descriptions of how the information is being used in specific ways and by whom. Some examples of data use include but are not limited to improvement of service-learning courses or programs, information for marketing or fundraising stories, and/or the reward and recognition of faculty, students, or partners.

3. Are there mechanisms for defining and measuring quality of community engagement built into any of the data collection or as a complementary process?

☐ No ☐ Yes

3.1. If Yes: Describe the definition and mechanisms for determining quality of the community engagement.

4. Are there systematic campus-wide assessment mechanisms to measure the outcomes and impact of institutional engagement?

☐ No ☐ Yes

The next series of questions will ask you about Outcomes and Impacts.

Outcomes are the short-term and intermediate changes that occur in learners, program participants, etc., as a direct result of the community engagement activity, program, or experience. An outcome is an effect your program produces on the people or issues you serve or address. Outcomes are the observed effects of the outputs on the beneficiaries of the community engagement. Outcomes should clearly link to goals. Measuring outcomes requires a commitment of time and resources for systematic campus-wide tracking or documentation mechanisms for the purposes of assessment. Outcomes provide the measurable effects the program will accomplish. When outcomes are reached new goals or objectives may need to be set, but when outcomes are not achieved it may be time to reassess. Impacts are the long-term consequence of community engagement. Impacts are the broader changes that occur within the community, organization, society, or environment as a result of program outcomes. While it is very difficult to ascertain the exclusive impact of community engagement, it is important to consider the desired impact and the alignment of outcomes with that impact. Furthermore, institutions can and should be working toward some way of measuring impact as an institution or as a member institution of a collective impact strategy.

For each question in this section please answer for goals, outcomes, and impacts.

The purpose of the questions is to assess the sustainability of engagement at your institution by looking at your approaches to estimating outcomes and impacts of community engagement on varied constituencies (students, faculty, community, and institution). When institutions engage with communities, we expect there will be effects on these constituent groups. These expectations may vary from institution to institution and may be implicit or explicit. Outcome and Impact may take many forms including benefits or changes that are in keeping with the goals set for engagement in collaboration with community partners. Thus, there is potential for both expected outcomes and impacts and unintended consequences, as well as positive and negative impacts.

For each constituent group identified below we are asking for a description of the mechanism for ongoing, regularly conducted impact assessment on an institution-wide level, not specific projects or programs. The response should include frequency of data collection, a general overview of findings, and at least one specific key finding.

- 4.1. If Yes: Indicate the focus of these systematic campus-wide assessment mechanisms and describe one key finding for both **Student Outcomes and Impacts**:

First, describe the assessment mechanism(s) such as interviews, surveys, course evaluations, assessments of learning, etc., schedule for data collection, and the key questions that shaped the design of the mechanism(s). We expect to see campus-wide approaches, robust student samples, data collection over time, and a summary of results. The key finding should illustrate impacts or outcomes on factors such as but not limited to academic learning, student perceptions of community, self-awareness, communication skills, social/civic responsibility, etc. Impact findings should not include reports of growth in the number of students involved or of students' enthusiasm for service-learning.

4.2. If Yes: Indicate the focus of these systematic campus-wide assessment mechanisms and describe one key finding for both **Faculty Outcomes and Impacts**:

First, describe the mechanism and schedule for data collection from faculty, and the key questions or areas of focus that guided the design of the mechanism. Mechanisms used might include but are not limited to interviews, surveys, faculty activity reports, promotion and tenure portfolios or applications, or similar sources. Include descriptions of the methods used for faculty from all employment statuses. Mechanisms used might include but are not limited to hiring protocols, compensation policies, orientation programs, etc. Key findings should describe differences or changes that illustrate impact on faculty actions such as teaching methods, research directions, awareness of social responsibility, etc. Findings should not include reports of growth in the number of faculty participating in community engagement; we are looking for impact on faculty actions in regard to engagement.

4.3. If Yes: Indicate the focus of these systematic campus-wide assessment mechanisms and describe one key finding for both **Community Outcomes and Impacts** as it relates to community-articulated outcomes:

First, describe the mechanism and schedule for data collection regarding impact on community, and the key questions or areas of focus that guided the design of the mechanism. Describe how the campus has responded to community-articulated goals and objectives. Mechanisms may include but are not limited to interviews, surveys, focus groups, community reports, and evaluation studies. We realize that this focus can be multidimensional in terms of level of community (local, city, region, country, etc.) and encourage a comprehensive response that reflects and is consistent with your institutional and community goals for engagement. We are looking for measures of change, impact, benefits for communities, not measures of partner satisfaction.

4.4. If Yes: Indicate the focus of these systematic campus-wide assessment mechanisms and describe one key finding for both **Institutional Outcomes and Impacts**:

First, describe the mechanism and schedule for data collection regarding impact on the institution and the key questions or areas of focus that guided the design of the mechanism. Mechanisms might include but are not limited to interviews, surveys, activity reports, other institutional reports, strategic plan measures, performance measures, program review, budget reports, self studies, etc. This section is where you may report measurable benefits to the institution such as image, town-gown relations, recognition, retention/recruitment, or other strategic issues identified by your institution as goals of its community engagement agenda and actions.

5. Does the institution use the data from these assessment mechanisms?
☐ No ☐ Yes

5.1. If Yes: Describe how the institution uses the data from the assessment mechanisms:

Using examples and information from responses above, provide specific illustrations of how the impact data has been used and for what purposes.

6. In the past 5 years, has your campus undertaken any campus-wide assessment of community engagement aimed at advancing institutional community engagement?
☐ No ☐ Yes

6.1. If Yes: What was the nature of the assessment, when was it done, and what did you learn from it?

Describe how you used specific opportunities and tools for assessing community engagement on your campus (opportunities might be a strategic planning process, a re-accreditation process, the self-study and external review of a center for community engagement, or others; tools might be the Anchor Institutions Dashboard, the Civic Health Index, the National Assessment of Service and Community Engagement (NASCE), the National Inventory of Institutional Infrastructure for Community Engagement (NIICE), or others).

G. Faculty and Staff

1. Does the institution provide professional development support for faculty in any employment status (tenured/tenure track, full time non-tenure track, and part time faculty) and/or staff who engage with community?
☐ No ☐ Yes

1.1. If Yes: Describe professional development support for faculty in any employment status and/or staff engaged with community:

Most campuses offer professional development – what is being asked here is professional development specifically related to community engagement. Describe which unit(s) on campus provides this professional development, and how many staff/faculty participate in the professional development activities that are specific to community engagement.

2. In the context of your institution's engagement support services and goals, indicate which of the following services and opportunities are provided specifically for community engagement by checking the appropriate boxes.

	Employment status			
	tenured /tenure track	full-time non-tenure track	part time	professional staff
Professional development programs				
Facilitation of partnerships				
Student teaching assistants				
Planning/design stipends				
Support for student transportation				
Eligibility for institutional awards				
Inclusion of community engagement in evaluation criteria				
Program grants				
Participation on campus councils or committees related to community engagement				
Research, conference, or travel support				
Other				

2.1. If Yes to “Other”: Please describe other support or services:

3. Does the institution have search/recruitment policies or practices designed specifically to encourage the hiring of faculty in any employment status and staff with expertise in and commitment to community engagement?
☐ No ☐ Yes

3.1. If Yes: Describe these specific search/recruitment policies or practices and provide quotes from position descriptions:

4. Are there **institutional-level policies** for faculty promotion (and tenure at tenure-granting campuses) that specifically reward faculty scholarly work that uses community-engaged approaches and methods? If there are separate policies for tenured/tenure track, full time non-tenure track, and part time faculty, please describe them as well.
☐ No ☐ Yes

4.1. If Yes: Use this space to describe the context for policies rewarding community-engaged scholarly work:

"Faculty scholarly work that uses community-engaged approaches and methods" refers to community engagement as part of teaching, research and creative activity, and/or service; i.e., community engagement as part of faculty roles.

Characteristics of community engagement include collaborative, reciprocal partnerships and public purposes.

Characteristics of scholarship within research and creative activities include the following: applying the literature and theoretical frameworks in a discipline or disciplines; posing questions; and conducting systematic inquiry that is made public; providing data and results that can be reviewed by the appropriate knowledge community, and can be built upon by others to advance the field.

Campuses often use the term community-engaged scholarship (sometimes also referred to as the scholarship of engagement) to refer to inquiry into community-engaged teaching and learning or forms of participatory action research with community partners that embodies both the characteristics of community engagement and scholarship.

In response to this question, if appropriate, describe the context for these policies; e.g., that the campus went through a multi-year process to revise the guidelines, which were approved in XXXX and now each department has been charged with revising their departmental-level guidelines to align with the institutional guidelines regarding community engagement.

5. Is community engagement rewarded as one form of **teaching and learning**? Include tenured/tenure track, full time non-tenure track, and part time faculty if there are policies that apply to these appointments.
o No o Yes

5.1. If Yes: Please cite text from the faculty handbook (or similar policy document):

6. Is community engagement rewarded as one form of **research or creative activity**? Include tenured/tenure track, full time non-tenure track, and part time faculty if there are policies that apply to these appointments.
o No o Yes

6.1. Please cite text from the faculty handbook (or similar policy document):

7. Is community engagement rewarded as one form of **service**? Include faculty from any employment status if there are policies that apply to these appointments.
o No o Yes

7.1. If Yes: Please cite text from the faculty handbook (or similar policy document):

8. Are there **college/school and/or department level policies** for promotion (and tenure at tenure-granting campuses) that specifically reward faculty scholarly work that uses community-engaged approaches and methods? Are there policies for tenured/tenure track, full time non-tenure track, and part time faculty in reappointment or promotion considerations?
o No o Yes

8.1. If Yes: List the colleges/schools and/or departments.

8.2. If Yes: What percent of total colleges/schools and/or departments at the institution is represented by the list above?

8.3. If Yes: Please cite three examples of college/school and/or department-level policies, taken directly from policy documents, that specifically reward faculty scholarly work using community-engaged approaches and methods; if there are policies specifically for tenured/tenure track, full time non-tenure track, and part time faculty, please cite one example:

- 9.** Is there **work in progress** to revise promotion and tenure (at tenure granting institutions) guidelines to reward faculty scholarly work that uses community-engaged approaches and methods?
☐ No ☐ Yes

9.1. If Yes: Describe the current work in progress, including a description of the process and who is involved. Describe how the president/chancellor, provost, deans, chairs, faculty leaders, chief diversity officer, or other key leaders are involved. Also describe any products resulting from the process; i.e., internal papers, public documents, reports, policy recommendations, etc. Also address if there are policies specifically for tenured/tenure track, full time non-tenure track, and part time faculty:

At this point, applicants are urged to review the responses to Foundational Indicators and Institutional Commitment sections above and determine whether Community Engagement is "institutionalized"—that is, whether all or most of the Foundational Indicators have been documented with specificity. If so, applicants are encouraged to continue with the application. If not, applicants are encouraged to withdraw from the process and apply in the 2025 application cycle which will begin through release of that application in January of 2023.

III. Categories of Community Engagement

A. Curricular Engagement

Curricular Engagement describes the teaching, learning, and scholarship that engages faculty, students, and community in mutually beneficial and respectful collaboration. Their interactions address community-identified needs, deepen students' civic and academic learning, enhance community well-being, and enrich the scholarship of the institution.

The questions in this section use the term "community-engaged courses" to denote academically based community-engaged courses. Your campus may use another term such as service-learning, community-based learning, public service courses, etc.

A1. Teaching and Learning

1. Does the institution have a definition, standard components, and a process for identifying community-engaged courses?
o No o Yes

1.1. If Yes: Discuss how your institution defines community-engaged courses, the standard components for designation, and the process for identifying community-engaged courses:

If your institution formally designates community-engaged courses, please provide the definition used for community engaged, the standard and required components for designation, and the process of application and review/selection for designation.

1.2. If Yes: How many designated for-credit community-engaged courses were offered in the most recent academic year? ____

2. What percentage of total courses offered at the institution? ____

3. Is community engagement noted on student transcripts?
o No o Yes

3.1. If Yes: Describe how community engagement is noted on student transcripts:

4. How many departments are represented by those courses? ____

5. What percentage of total departments at the institution? ____

6. How many faculty taught community-engaged courses in the most recent academic year? ____

7. What percentage are these of the total faculty at the institution? ____
8. What percent of the faculty teaching community-engaged courses are tenured/tenure track, full time non-tenure track, and part time? _____
9. How many students participated in community-engaged courses in the most recent academic year? ____
10. What percentage of students at the institution? ____
11. Describe how data provided in questions 2-10 above are gathered, by whom, with what frequency, and to what end:
12. Are there **institutional (campus-wide)** learning outcomes for students' curricular engagement with community?
o No o Yes
- 12.1. If Yes: Please provide specific examples of institutional (campus-wide) learning outcomes for students' curricular engagement with community:

Please provide specific and well-articulated learning outcomes that are aligned with the institutional goals regarding community engagement. Learning outcomes should specify the institutional expectations of graduates in terms of knowledge and understanding, skills, attitudes, and values. Those outcomes are often associated with general education, core curriculum, and capstone experiences that include community engagement.

13. Are institutional (campus-wide) learning outcomes for students' curricular engagement with community systematically assessed?
o No o Yes
- 13.1. If Yes: Describe the strategy and mechanism assuring systematic assessment of institutional (campus-wide) learning outcomes for students' curricular engagement with community:
- 13.2. If Yes: Describe how the assessment data related to institutional (campus-wide) learning outcomes for students' curricular engagement with community are used:
14. Are there **departmental or disciplinary** learning outcomes or competencies for students' curricular engagement with community?
o No o Yes
- 14.1. If Yes: Provide specific examples of departmental or disciplinary learning outcomes for students' curricular engagement with community:

15. Are departmental or disciplinary learning outcomes for students' curricular engagement with community systematically assessed?

☐ No ☐ Yes

15.1. If Yes: Describe the strategy and mechanism assuring systematic assessment of departmental or disciplinary learning outcomes for students' curricular engagement with community:

15.2. If Yes: Describe how assessment data related to departmental or disciplinary learning outcomes for students' curricular engagement with community are used:

A.2. Curriculum

1. Is community engagement integrated into the following curricular (for-credit) activities? Please select all that apply:

- ☐ Student Research
- ☐ Student Leadership
- ☐ Internships, Co-ops, Career exploration
- ☐ Study Abroad
- ☐ Alternative Break tied to a course

1.1. For each category checked above, provide examples:

2. Has community engagement been integrated with curriculum on an institution-wide level in any of the following structures? Please select all that apply:

- ☐ Graduate Studies
- ☐ Core Courses
- ☐ Capstone (Senior-level project)
- ☐ First-Year Sequence
- ☐ General Education
- ☐ In the Majors
- ☐ In the Minors

2.1. For each category checked above, provide examples:

B. Co-Curricular Engagement

*Co-curricular Engagement describes structured learning that happens outside the formal academic curriculum through trainings, workshops, and experiential learning opportunities. Co-curricular Engagement requires **structured reflection** and **connection to academic knowledge** in the context of **reciprocal, asset-based community partnerships**.*

1. Thinking about the description of co-curricular engagement above, please indicate which of the following institutional practices have incorporated co-curricular engagement at your campus. Please select all that apply:

- ☐ Social innovation/entrepreneurship

- ☐ Community service projects - outside of the campus
- ☐ Community service projects - within the campus
- ☐ Alternative break – domestic
- ☐ Alternative break – international
- ☐ Student leadership
- ☐ Student internships
- ☐ Work-study placements
- ☐ Opportunities to meet with employers who demonstrate Corporate Social Responsibility
- ☐ Living-learning communities/residence hall/floor
- ☐ Student teaching assistants
- ☐ Athletics
- ☐ Greek life
- ☐ Other (please specify)

1.1. For each program checked above, provide examples:

As with curricular engagement, a number of these activities take place off campus in communities and may or may not be characterized by qualities of reciprocity, mutuality, and be asset-based. This question is asking about which offerings reflect these qualities. The examples provided should indicate how a co-curricular program has been transformed by and/or reflect these community engagement principles.

2. Do students have access to a co-curricular engagement tracking system that can serve as a co-curricular transcript or record of community engagement?

2.1. If Yes: Please describe the system used and how it is used.

3. Does co-curricular programming provide students with clear developmental pathways through which they can progress to increasingly complex forms of community engagement over time?

3.1. If Yes: Please describe the pathways and how students know about them.

C. Professional Activity and Scholarship

1. Are there examples of staff professional activity (conference presentation, publication, consulting, awards, etc.) associated with their co-curricular engagement achievements (i.e., student program development, training curricula, leadership programming, etc.)?

o No o Yes

1.1. Provide a minimum of five examples of staff professional activity:

*The purpose of this question is to determine the level to which staff are involved in professional activities that contribute to the ongoing development of best practices in curricular and co-curricular engagement. Doing so is an indicator of attention to improvement and quality practice as well as an indication that community engagement is seen as a valued staff professional activity. Please provide examples that your staff have produced in connection with their community engagement professional duties. We expect this to include professional products on topics such as but not limited to curriculum and co-curriculum development, assessment of student learning in the community, student development and leadership, etc., that have been disseminated to others **through professional venues** as illustrated in the question.*

2. Are there examples of faculty scholarship, including faculty of any employment status associated with their curricular engagement achievements (scholarship of teaching and learning such as research studies, conference presentations, pedagogy workshops, publications, etc.)?

☐ No ☐ Yes

2.1. Provide a minimum of five examples of faculty scholarship from as many different disciplines as possible:

The purpose of this question is to determine the level to which faculty are involved in traditional scholarly activities that they now associate with curricular engagement. Doing so is an indicator of attention to improvement and quality practice as well as an indication that community engagement is seen as a valued scholarly activity within the disciplines. Please provide scholarship examples that your faculty have produced in connection with their service learning or community-based courses. We expect this to include scholarly products on topics such as but not limited to curriculum development, assessment of student learning in the community, action research conducted within a course, etc., that have been disseminated to others through scholarly venues as illustrated in the question.

3. Are there examples of faculty scholarship and/or professional activities of staff associated with the scholarship of engagement (i.e., focused on community impact and with community partners) and community engagement activities (technical reports, curriculum, research reports, policy reports, publications, other scholarly artifacts, etc.)?

☐ No ☐ Yes

3.1. Provide a minimum of five examples of scholarship from as many different disciplines as possible:

The purpose of this question is to explore the degree to which community engagement activities have been linked to faculty scholarly activity and staff professional activity. Describe outputs that are recognized and valued as scholarship and professional activity. Please provide examples such as but not limited to research studies of partnerships, documentation of community response to outreach programs, or other evaluations or studies of impacts and outcomes of outreach or partnership activities that have led to scholarly reports, policies, academic and/or professional presentations, publications, etc. Examples should illustrate the breadth of activity across the institution with representation of varied disciplines, professional positions, and the connection of outreach and partnership activities to scholarship. Broader Impacts of Research activities producing co-created scholarship of investigators and practitioners aimed at meaningful societal impacts could be included here.

D. Community Engagement and Other Institutional Initiatives

Please complete all the questions in this section.

1. Does community engagement directly contribute to (or is it aligned with) the institution's **diversity and inclusion** goals (for students and faculty)?

☐ No ☐ Yes

1.1. Please describe and provide examples:

2. Is community engagement connected to efforts aimed at **student retention** and success?

☐ No ☐ Yes

2.1. Please describe and provide examples:

3. Does the campus **institutional review board** (IRB) or some part of the community engagement infrastructure provide specific guidance for researchers regarding human subjects protections for community-engaged research?

☐ No ☐ Yes

3.1. Please describe and provide examples:

4. Is community engagement connected to campus efforts that support federally funded grants for **Broader Impacts of Research** activities of faculty and students?

☐ No ☐ Yes

4.1. Please describe and provide examples:

5. Does the institution encourage and measure **student voter registration and voting**?

☐ No ☐ Yes

5.1. Describe the methods for encouraging and measuring student voter registration and voting.

6. Is the institution committed to providing opportunities for students to **discuss controversial social**, political, or ethical issues across the curriculum and in co-curricular programming as a component of or complement to community engagement?

☐ No ☐ Yes

6.1. Describe the ways in which the institution actively promotes discussions of controversial issues:

7. Does your campus have curricular and/or co-curricular programming in **social innovation or social entrepreneurship** that reflects the principles and practices of community engagement outlined by the definition of community engagement provided above?

☐ No ☐ Yes

7.1. Please describe and provide examples:

E. Outreach and Partnerships

Outreach and Partnerships has been used to describe two different but related approaches to community engagement. Outreach has traditionally focused on the application and provision of institutional resources for community use. Partnerships focus on collaborative interactions with community and related scholarship for the mutually beneficial exchange, exploration, and application of knowledge, information, and resources (research, capacity building, economic development, etc.). The distinction between these two is grounded in the concepts of reciprocity and mutual benefit, which are explicitly explored and addressed in partnership activities. Community engaged institutions have been intentional about reframing their outreach programs and functions into a community engagement framework that is more consistent with a partnership approach.

E1. Outreach

1. Indicate which outreach programs and functions reflect a community engagement partnership approach. Please select all that apply:

- ☐ Learning centers
- ☐ Tutoring
- ☐ Extension programs
- ☐ Non-credit courses
- ☐ Evaluation support
- ☐ Training programs
- ☐ Professional development centers
- ☐ Career assistance and job placement
- ☐ Other (please specify)

1.1. For each category checked above, provide examples of how the outreach is consistent with a community engagement partnership approach:

2. Which institutional resources are provided as outreach to the community? Please select all that apply:

- ☐ Cultural offerings
- ☐ Athletic offerings
- ☐ Library services
- ☐ Technology
- ☐ Faculty consultation
- ☐ Other (please specify)

2.1. For each category checked above, provide examples of how these institutional resources are consistent with a community engagement partnership approach:

E.2. Partnerships

This section replaces the previous “partnership grid” with a series of repeating questions for each of the partnerships you identify.

1. Describe representative examples of partnerships (both institutional and departmental) that were in place during the most recent academic year (maximum=15 partnerships).
 - 1.1. Project/Collaboration Title
 - 1.2. Community Partner (and email contact information for community partner)
 - 1.3. Institutional Partner
 - 1.4. Purpose of this collaboration
 - 1.5. Length of Partnership
 - 1.6. Number of faculty involved
 - 1.7. Number of staff involved
 - 1.8. Number of students involved
 - 1.9. Grant funding, if relevant
 - 1.10. Impact on the institution
 - 1.11. Impact on the community

As part of this section, we are asking for an email contact for each partnership provided. The following email will be sent to your community partner. Please note that community partners are assured confidentiality in their responses and their responses will not be made available to participating campuses. It will be up to the campus to request the responses from the community partners after the classification process if the campus wants the responses:

Dear community organization partnering with a college or university,

{Name of Campus} is in the process of applying for the 2020 Elective Community Engagement Classification from the Carnegie Foundation. The classification is offered to campuses that can demonstrate evidence of collaboration between institutions of higher education and their larger communities (local, regional/state, national, global) for the mutually beneficial creation and exchange of knowledge and resources in a context of partnership and reciprocity. Partnerships that meet the standards of community engagement are grounded in the qualities of reciprocity, mutual respect,

shared authority, and co-creation of goals and outcomes.

We were provided your email address by the campus applying for the Community Engagement Classification. The Community Engagement classification is offered by the Carnegie Foundation and is available to all colleges and universities in the United States. For more information about the classification, please go to <https://www.brown.edu/swearer/carnegie>.

We would like to ask you to assist with this classification process by providing confidential responses to a very brief online survey (LINK provided). While your participation in the survey is entirely voluntary, your input and perspective on the activity are valuable in evaluating campus community engagement. Beyond the evaluation of campus community engagement, the responses provided by community partners contributes to a national understanding of how communities and campuses are collaborating for the purpose of deepening the quality and impact of such partnerships.

In order to be able to assess and improve partnership activities, it is important to provide candid responses to the questions. The responses you provide are confidential and will not be shared by Swearer Center as the Administrative home of the Carnegie Community Engagement Classification with the campus.

Many thanks for your response.

Sincerely,

Survey Questions:

The survey will include the first page of this framework with the definition of community engagement.

As a community partner, to what extent do you agree or disagree with the following statements with regards to your collaboration with this institution? (Strongly disagree, Disagree, Neither agree nor disagree,, Agree, Strongly agree)

- 1. Community partners are recognized by the campus.*
- 2. Community partners are asked about their perceptions of the institution's engagement with and impact on community.*
- 3. My community voice is heard and I have a seat on the table in important conversations that impact my community.*
- 4. The faculty and/or staff that our community partnership works with take specific actions to ensure mutuality and reciprocity in partnerships.*
- 5. The campus collects and shares feedback and assessment findings regarding partnerships, reciprocity, and mutual benefit, both from community partners to the institution and from the institution to the community.*
- 6. The partnership with this institution had a positive impact on my community*

Open –ended questions:

7. *Describe the actions and strategies used by the campus to ensure mutuality and reciprocity in partnerships.*
8. *Please provide any additional information that you think will be important for understanding how the campus partnering with you has enacted reciprocity, mutual respect, shared authority, and co-creation of goals and outcomes.*

The purpose of this question is to illustrate the institution's depth and breadth of interactive partnerships that demonstrate reciprocity and mutual benefit. Examples should be representative of the range of forms and topical foci of partnerships across a sampling of disciplines and units.

2. Does the institution or departments take specific actions to ensure mutuality and reciprocity in partnerships?
☐ No ☐ Yes

2.1. Describe the actions and strategies for ensuring mutuality and reciprocity in partnerships:

The purpose of this question is to determine if the institution is taking specific actions to ensure attention to reciprocity and mutual benefit in partnership activities. Do not provide project examples here. Please describe specific institutional strategies for initiating, sustaining, and enhancing interaction within partnerships that promote mutuality and reciprocity in those partnerships. Examples could include the development of principles that inform the development and operation of partnerships, professional development activities, recognition or review protocols, reporting or evaluation strategies, etc.

3. Are there mechanisms to systematically collect and share feedback and assessment findings regarding partnerships, reciprocity, and mutual benefit, both from community partners to the institution and from the institution to the community?
☐ No ☐ Yes

3.1. If yes, describe the mechanisms and how the data have been used to improve reciprocity and mutual benefit:

IV. Reflection and Additional Information

1. (Optional) Reflect on the process of completing this application. What learnings, insights, or unexpected findings developed across the process?
2. (Optional) Use this space to elaborate on any question(s) for which you need more space. Please specify the corresponding section and item number(s).
3. (Optional) Is there any information that was not requested that you consider significant evidence of your institution's community engagement? If so, please provide the information in this space.
4. (Optional) Please provide any suggestions or comments you may have on the application process for the 2020 Elective Community Engagement Classification.

Request for Permission to Use Application for Research:

In order to better understand the institutionalization of community engagement in higher education, we would like to make the responses in the applications available for research purposes for both the Carnegie Foundation and its Administrative Partner for the Community Engagement Classification, the Swearer Center for Public Service, and for other higher education researchers as well.

Only applications from campuses that agree to the use of their application data will be made available for research purposes.

No identifiable application information related to campuses that are unsuccessful in the application process will be released.

Please respond to A or B below:

- A. I consent to having the information provided in the application for the purposes of research. In providing this consent, the identity of my campus will not be disclosed.
o No o Yes
- B. I consent to having the information provided in the application for the purposes of research. In providing this consent, I also agree that the identity of my campus may be revealed.
o No o Yes

Liberal education & democracy: The case for pragmatism.

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LIBERAL EDUCATION & DEMOCRACY: THE CASE FOR PRAGMATISM

Listen

Section:
DISCOURSE

Those of us who work in the academy see ourselves as serving the society and of promoting and strengthening our particular form of democratic self-government

Some defenders of the status quo in liberal education will argue that our quest for a more pragmatic liberal education is little more than a revival of the Philistine call for "relevance" that caused folks in the humanities so much distress during the late 60s and early 70s. Whether or not there is any truth in such a claim, I believe that there is a completely different--and more constructive--way to look at the issue.

Instead of advocating that we start tinkering with liberal education with the aim of making it "more relevant" to the "real world," I'd propose that we first consider three questions:

First, what's wrong with contemporary U.S. democracy and society? Where have we gone astray? What needs fixing?

Second, what part, if any, has our education system played in helping to create and perpetrate these problems? In particular, what part has our higher education system played?

And finally, what role, if any, can higher education play in helping to alleviate these problems? More specifically, are there ways in which our colleges and universities can begin to deal more constructively with contemporary social problems and--at the same time--preserve what is most vital and fundamental to effective liberal education? More optimistically: Are there reforms that we can undertake which will increase our capacity to serve U.S. society and U.S. democracy while simultaneously strengthening our liberal education programs?

When it comes to the first question, there is no need here to belabor the obvious: contemporary American society is replete with myriad social problems that need fixing. Many of these problems--shaky race relations, growing economic disparities and inequities, excessive materialism, decaying inner cities, a deteriorating infrastructure, an irresponsible mass media, declining civic engagement, and the increasing ineffectiveness of government, to name just a few--seem to be getting worse by the day. In a democracy, of course, citizen disengagement from politics and governmental ineffectiveness not only go hand in hand, but also cripple our capacity to deal constructively with most of the other problems.

With respect to the second question I can be even more brief: Our education system--and higher education in particular--has played a significant role in helping to create these problems. But rather than simply playing the "blame game," I'd prefer to consider in some depth the third question: What can be done? Before discussing specific reforms, let's first take a closer look at how our higher education system helps to perpetuate the problem.

The central role of beliefs

The more I reflect on the problems confronting higher education and the larger society, the more I become convinced that at the heart of our problems in trying to effect positive social change are issues of beliefs. By this I mean not only our beliefs about the meaning and purpose of a liberal education, but also our notions about educational excellence and especially our view of the role that higher education should play in the larger society. The problem is not so much that we might differ in our beliefs about these matters, but rather that these beliefs remain unexposed and unexamined while we discuss and debate the education policies and practices that emanate from them.

As a starting point, let's take the issue of the relationship between liberal education and society. Different people can hold very different beliefs about this relationship. An extreme view, which would

probably be endorsed by only a small number of hard-core purists such as Robert Maynard Hutchins, is that the university should remain walled off from the external world of practical affairs so that the students can study and learn and faculty can pursue truth undisturbed by worldly distractions. While this "Ivory Tower" concept of higher education has a certain appeal for scholars, it never could, and never will, represent a viable conception of higher education in modern American society. Like it or not, American higher education is a creature of society, is sanctioned and supported by that society, and has in turn pledged itself to serve that society in its mission statements, catalogs, and other public pronouncements.

An alternate belief system, which seems to dominate in discussions of education "policy" these days, is what I like to call the "pegboard" view. With this view, the outside world is like a giant board containing an array of differently shaped job slots, and the role of higher education is to produce the right-shaped people--the "pegs"--to fill these slots. This is the dominant belief system not only of our captains of industry, but also of most politicians and policymakers, not to mention many students, teachers, and parents. The pegboard view is also what drives the advocates of the "competitiveness" argument, namely, that higher education must deliver more people with expertise in science, technology, and modern management techniques so that America's economy can remain competitive with the economies of Western Europe and especially the burgeoning economies of countries on the Pacific Rim.

My main problem with the pegboard view is that it represents an extremely limited conception not only of the role of higher education, but also of the larger society. When we consider the major problems plaguing contemporary U.S. society, it is ludicrous to argue that they can all be summed up in the issue of economic competitiveness. Competitiveness in the international marketplace bears only a marginal connection to the domestic issues of racial polarization, poverty, joblessness, crime, a deteriorating infrastructure, environmental degradation, political apathy, and distrust of our social institutions. There is nothing inherently wrong with higher education's attempting to produce graduates who possess more of the job skills required by modern business and industry, but it is naive to think that this will make much of a dent in our myriad social problems. Indeed, becoming more "competitive" economically may well be antithetical to any effort to deal constructively with problems such as the infrastructure, crime, and especially the environment.

Still another conception of the role of higher education in society is what I call the "private economic benefit" viewpoint, which, simply stated, maintains that the role of higher education is to provide opportunities for individuals to obtain higher-level and higher-paying jobs and, in general, to live a more comfortable and affluent lifestyle. This is obviously a close cousin of the pegboard view, in that it focuses on employment, upward economic mobility, and the development of "human capital." One might also call this the "consumer" viewpoint, in the sense that it sees individual students as consumers who invest time and money in higher education in order to receive greater economic benefits later on. This idea of a trade-off, an investment for a later return, is what economists do when they calculate the rate of return to higher education. Proponents of higher education who tout the increased earnings

associated with higher education are also operating from this same belief system. Even if one accepts the argument that private economic benefits provide the main justification for higher education, this particular belief system is extremely limited because it has little to say about how the society as a whole is served by such an approach. In other words, while it may be a laudable goal to contribute to the economic comfort and well-being of those citizens who are fortunate enough to enter and complete higher education, this viewpoint has little to say about what is going to happen to people who are not able to complete higher education, nor does it say anything about how, if at all, the many other social and economic problems of our society will be addressed by such an approach.

An entirely different kind of belief system is implied in the various public pronouncements that U.S. colleges and universities make in their catalogs and mission statements. In many ways, these sometimes lofty statements come as close as anything to Dewey's conception of the proper role of education in society. If we were to study the mission statements of a randomly selected group of American higher education institutions, we would seldom, if ever, find any mention of private economic benefits, international competitiveness, or filling slots in the labor market. On the contrary, when it comes to describing its educational mission, the typical college or university will use language such as "preparing students for responsible citizenship," "developing character," "developing future leaders," "preparing students to serve society," and so forth. In other words, if we are to believe our own rhetoric, those of us who work in the academy see ourselves as serving the society and of promoting and strengthening our particular form of democratic self-government. While such a belief system does not preclude individual economic benefits or the preparation of people to serve the needs of employers, the central focus is on responsible citizenship and service.

Clearly, the manner in which we approach the social or "pragmatic" implications of liberal education will depend heavily on which belief system or world view we embrace. "Pragmatism" implies one thing if we see ourselves simply as helping young people to lead more comfortable and affluent lives, but quite another thing if we see ourselves as working together to strengthen our society and our democracy. I would argue that we really have no choice but to embrace the latter view.

The problem, of course, is that if you look at the typical U.S. college or university--its curriculum and cocurriculum, its teaching and personnel practices, and the values that govern its administrative policies--it's very difficult to find evidence of a core commitment to preparing students for responsible citizenship. Most institutions, in short, have simply not put their "citizenship" and "service" commitments into practice.

Perhaps the most pressing reason to begin taking our public pronouncements about our societal mission more seriously is the sorry shape of contemporary American democracy. Most citizens don't vote, negative campaigning reigns, and public distrust, contempt, and hostility toward "government" has reached unprecedented heights. The most recent freshman surveys conducted by the Higher Education Research Institute indicate that student interest and engagement in politics is at an all-time low.^[1] While academics frequently comment on this sorry state of affairs, they seldom suggest either that

higher education may have played a part in creating these problems or that it can or should attempt to do anything about them.

Leadership and citizenship

Most of us probably think of democracy primarily as an external process, where people do things like discussing issues and politics, campaigning for candidates, or voting. While these activities are indeed important elements of a healthy democracy, none of these external behaviors is likely to occur in the absence of appropriate internal conditions: an understanding of how democratic government is supposed to function, an appreciation of the individual's responsibilities under such a form of government, and a willingness, if not a determination, to be an active participant. In other words, democratic behavior is most likely to occur when the person has acquired certain knowledge, understanding, beliefs, and values. These internal qualities are precisely the kinds of qualities that educational institutions are in an ideal position to foster.

The problems that plague U.S. democracy and civil life are in many respects problems of leadership. By "leadership" I mean not only what elected and appointed public officials do, but also the large and small civic acts performed by countless individual citizens who are actively engaged in making a positive difference in the society. A leader, in other words, is anyone--regardless of formal position--who serves as an effective social change agent, so in this sense every student--and every faculty and staff member--is a potential leader.

Discussions about the frail state of U.S. democracy typically make reference to such problems as lack of citizen engagement, distrust of government, racial divisions, unethical politicians, the excessive influence of money, and an irresponsible mass media. While each of these problems needs more of our attention, the biggest problem with contemporary civic life in America may be that too few of our citizens are actively engaged in efforts to effect positive social change. Viewed in this context, the "leadership development" challenge for higher education is to empower students, to help them develop those special talents and attitudes that will enable them to become effective social change agents. While the list of relevant leadership talents is a long one, it would almost certainly have to include such qualities as communication skills (especially listening skills), empathy, generosity, commitment, self-understanding, honesty (i.e., the ability to develop trust), and the ability to work collaboratively with others. These are the same qualities, of course, that are needed for effective citizenship.

The problem for us in the higher education community, in a nutshell, is that we have not done a very good job of developing these qualities in our students because we have been preoccupied with other things. While many of my faculty colleagues may argue that the failure or success of our system of representative democracy is not higher education's responsibility or concern, they forget that promoting "good citizenship" and "developing future leaders" are two of the most commonly stated values in the mission statements of colleges and universities. Like it or not, we are publicly on record as committing ourselves and our institutions to promoting leadership and citizenship.

What can be done?

Although I may well be accused of oversimplification, I would submit that there is currently available to all of us who teach the liberal arts a simple but extremely powerful tool that not only promises to make liberal learning more "pragmatic" in addressing our myriad social problems, but that also provides us with an opportunity to strengthen the most important features of a classical liberal education. I am speaking here of "experiential learning," and the special form of it that has come to be known as "service learning." The basic idea behind service learning is to use a community or public service experience to enhance the meaning and impact of traditional course content. Service learning can not only enrich traditional course content by giving the student an opportunity to "test" or "demonstrate" abstract theory in the real world, but can also improve the quality of the service being performed by giving it an intellectual underpinning. Although increasing numbers of institutions are giving serious consideration to the idea of expanding their service learning opportunities for students, this particular pedagogical innovation is still a relatively infrequent, if not marginal, activity on most college campuses. The obstacles to more widespread use of service learning are many, including lack of faculty experience and expertise, the belief that it may incur additional costs, faculty resistance, and the question of efficacy: Does it really work?

Recently at the Higher Education Research Institute, we completed a series of empirical studies of how students are affected by participation in community service, and the findings are nothing short of remarkable. In one national longitudinal study, we attempted to assess the impact of President Clinton's small grant program for promoting volunteer service on college campuses, known as Learn and Serve America, Higher Education.[2] In this study we compared service participants with nonparticipants using thirty-five different outcome measures covering three broad areas: academic development, civic values, and life skills. What was especially remarkable about the findings was that every one of the thirty-five student outcomes was positively influenced by service participation. While the magnitude of the positive effects on academic development--such things as grades, retention, hours spent studying, interaction with faculty, and interest in postgraduate study--was quite modest, the most important finding is that there were no negative effects. In other words, the argument that academic work suffers because of the additional time and energy required by the service experience is simply not supported by the evidence. Indeed, participation in community service during the undergraduate years appears to enhance academic development. Recent research also indicates that these favorable outcomes are enhanced if this service is not merely volunteer work, but rather is performed as part of a course.[3]

In another longitudinal study, we sought to determine whether there are any lasting effects of the undergraduate service experience that extend into the first five years after college.[4] Once again we found uniformly positive effects on a range of postcollege outcomes, including enrollment in postgraduate study, commitment to community values, participation in community service after college, and satisfaction with the extent to which the undergraduate experience prepared the student for postcollege employment. Also--of special interest to college presidents and directors of development--is the finding that undergraduate participation in community service increases the likelihood that an alumnus will contribute money to the alma mater!

Turning now to the question of costs, there is no question that service learning--properly done--involves significant additional costs. Our site visits to campuses that received Learn and Serve America grants convinced us that any significant program of service learning requires a staff of experienced professionals who can develop field placement opportunities in the community and who can work directly with faculty to assist in the development of service learning components in courses. This is no work for amateurs. Moreover, if the faculty has to do this on their own, it will be very difficult to expand service learning significantly. Even with such professional help, however, service learning tends to require more faculty time and effort than does traditional classroom instruction. It also, of course, requires much more engagement from the student. One obvious and simple way to deal with these "cost" issues is to award more credit for courses that incorporate service learning. Such an approach would certainly seem to be justified, given the additional faculty and student effort involved.

One of the most attractive features of service learning is that it affords us an opportunity to incorporate, in one learning experience, some of our most powerful but currently underutilized pedagogical techniques. One of these is cooperative or collaborative learning. Service learning readily lends itself to collaboration, where small groups of students work together, teaching and learning from each other. According to a large and growing body of research, collaborative learning is more effective than traditional individualistic or competitive learning.[5] This form of learning capitalizes on the power of the peer group, which recent research has shown to be the most potent source of influence on the undergraduate.[6] Students are more likely to invest time and energy in the learning experience if they know that their efforts will be scrutinized by peers, or if they know that they are part of a larger effort in which fellow students must depend on each other.

Service learning also incorporates a good deal of another powerful pedagogical device: reflection. This typically involves students reflecting on the service experience, not only in terms of its significance for the theoretical course content, but also in terms of what it means to them personally.

For me, the process of considered reflection on one's experience--whether it takes the form of quiet meditation, introspective writing, or group "processing"--comes closer than almost anything else we can do in the liberal arts to promoting a real understanding of oneself and others. While the ancient injunction to "know thyself" is at the core of almost all of our great philosophical and religious traditions, it typically receives very little attention in contemporary curriculum and pedagogy.

Creating a true "Citizenship Curriculum"

If we really want to make good on our professed commitment to democracy and citizenship, we need to examine all aspects of our liberal education programs with the following questions in mind: Does this course, or this requirement, or this teaching technique, or this educational policy contribute to the student's ability to become an informed, engaged, and responsible member of society? Are there alternative approaches that might be more effective in helping us realize these goals?

A real citizenship curriculum would no doubt include much of what we currently call the liberal arts, but the "packaging" and "delivery system" might be very different. The new curriculum would also include a number of new elements. Most importantly, it would be designed around a thoroughgoing conception of (1) what students need to know about contemporary U.S. democracy and how it actually works, and (2) what skills and attitudes students need to develop to become engaged and effective citizen/participants.

My own sense about such a curriculum is that it would enrich, rather than diminish or dilute, the traditional "liberal education" now being offered in most of our colleges and universities. In particular, the humanities and social science requirements that so many students now find to be "boring" or "irrelevant" could be given new life and meaning if the content and pedagogical approach were to be more directly connected to issues of citizenship and government. Contemporary U.S. democracy and society and their problems afford countless opportunities to explore concepts such as truth, honesty, self-knowledge, power, and the law, and to deliberate fundamental value issues such as competition versus collaboration, the individual versus the community, material versus spiritual values, freedom and responsibility, equity versus excellence, and the distribution of wealth.

Pedagogy would also have to change, of course, in recognition of the fact that civic life and engagement is not just something one talks or thinks or writes about, but also something one does and experiences. Undergraduate instruction in the natural sciences has long been based on a recognition that abstract theory cannot be fully understood or appreciated in the absence of hands-on experience in the laboratory or in the field. Could not the humanities and the social sciences also introduce "lab" components, say, in the form of service learning? When properly designed and implemented, service learning can not only give greater meaning to and otherwise enrich the theoretical content of lectures and textbooks, but can also provide students with firsthand experience in civic responsibility, leadership, and collaboration.

Many educators seem to agree with the notion that we need to abandon our near-exclusive preoccupation with content and talk more about pedagogy. While our research on college students[7] would certainly support such a view, I think we also need to take a fresh look at content.

If those of us who consider ourselves to be liberal arts educators want to get serious about revitalizing U.S. democracy, we also need to consider what the content of a "good citizenship" curriculum would really look like. We need to ask ourselves not just whether our students know about U.S. history, the Constitution, and the three branches of government, but how much they really know about contemporary U.S. government and the way it functions. The unpleasant reality is that there is an enormous difference between what our democracy is supposed to be and what it really is. Do students really understand how beholden politicians at all levels and in both major parties are to their big contributors? Do they really understand the critical role played by the mass media, not only in trivializing political discourse but also in narrowing the range of political discussion and debate? Do they understand why the corporately controlled mass media can no longer play the critical maverick role that

has traditionally been the responsibility of the "fourth estate"? With the near-exclusive media focus on "who's ahead" in the competition for public office, do students really understand that democracy is at root a cooperative form of government, and that taxation is a process whereby we pool our resources so that we can receive services that we cannot obtain on our own? Do they really understand that the much-maligned "tax and spend" approach is the way that government must operate if it is to operate responsibly, and that the real issue is not tax and spend versus some other form of government but rather who pays how much of the taxes and how the money gets spent?

Students also need to understand that this widespread public ignorance about democratic self-government and the issues of taxes and spending has produced a virtual paralysis of government at all levels. While polls show that we as citizens clearly want more and improved government services in many critical areas--education, health care, inner cities, the infrastructure, and the environment--our elected leaders feel helpless to deliver anything significant in any of these areas because they believe we are broke (i.e., the massive deficit) and are afraid to ask us for more money (i.e., increase taxes).

The role of higher education: The pursuit of "Excellence"

The relevance of all of these problems to what we do in higher education is clear: We educate a large proportion of the voting citizenry, not to mention most of the politicians, journalists, reporters, and news commentators. We also educate all of the school administrators and teachers who, in turn, educate the entire citizenry at the precollegiate level. And we also do much to shape that precollegiate curriculum through what we require of our applicants. In short, we in the higher education community not only have helped to create the problems that plague U.S. democracy, but we are also in a position to begin doing something about them. However, if we are to have any hope of implementing real reforms, we must begin to reexamine some of the time-honored practices that have so far prevented us from fulfilling our commitment to democracy.

The fact is that higher education is to a certain extent an expression of society, just as much as it is a servant of that society. If I could change just one thing about the way we academics approach our own work, it would be to develop a greater sense of self-awareness about the values and beliefs that drive our policies, and especially about the extent to which we have, perhaps unconsciously, embraced some of society's least noble and perhaps even self-destructive values and beliefs.

I've already discussed our various beliefs about our role in society. Let's now consider our beliefs about academic "excellence." For a number of years now, I've been very critical of our traditional approaches to making ourselves academically excellent, which often seem to be reduced to acquiring as many resources as possible and building up our institution's reputation so we can move up as far as possible in the institutional pecking order. My concern about these approaches is that they fail to directly address our basic societal purposes of teaching and public service. Not that we don't need reputations or resources in order to teach and serve, but rather that a unidimensional focus on resource acquisition and reputation building as ends in themselves can ultimately cause us to neglect our basic educational and service missions.[8] Paradoxically, it can also cause us to neglect our research mission, because

we become focused more on acquiring top scholars and researchers than on developing the scholarly talents of the incumbent faculty.

The roots of many of our seemingly most intractable problems can be found in this preoccupation with resource acquisition and reputational enhancement: the valuing of research over teaching, the struggle between equity and excellence, and the lack of community that we find on many campuses. We value research more than teaching because we believe that outstanding scientists and scholars will add more to our reputation and resources than will outstanding teachers or mentors. And when we define our excellence in terms of the test scores of our entering freshmen--the high-scoring student being viewed here as a "resource" that enhances our reputation--we set our sense of excellence in direct conflict with our desire to promote educational opportunities for those groups in our society whose test scores put them at a competitive disadvantage. Finally, when we place the highest value on the individual scholarly accomplishments of our students and faculty, we reinforce their competitive and individualistic tendencies, making it very difficult for them to develop those qualities that help to promote a sense of community on the campus: good collegueship, collaboration, community service, citizenship, and social responsibility. These latter qualities, of course, are the same ones that are needed to make any democracy work.

Our students are going to be influenced at least as much by what we academics do as by what we say in our mission statements and classroom lectures. In other words, we are modeling certain values in the way we conduct ourselves professionally: how we treat our students in and out of class, how we deal with each other as professional colleagues, and how we run our institutions. If we want our students to acquire the democratic virtues of honesty, tolerance, empathy, generosity, teamwork, cooperation, service, and social responsibility, then we have to model these same qualities not only in our individual professional conduct but also in our curriculum, our teaching techniques, and our institutional policies.

The problem that plagues our contemporary democracy is in many respects the same problem that deToqueville identified more than 150 years ago: the tension between individualism and community. This tension is exacerbated by the mistaken belief that we are independent of and separate from each other. Even our most recent research on students highlights the importance of community: The single most important source of influence on the individual student turns out to be the peer group. We associate freedom with individualism, and democracy with community, but the two are really inseparable: We create our own democracy and our government through our individual beliefs and actions, while at the same time the condition and quality of our community and democracy defines what kind of individual freedoms and what kind of life we enjoy. The real question is what kind of community and democracy we want to have.

In certain respects our preoccupation with enhancing resources and reputations is simply a reflection of our changing society, which during the past few decades has increasingly come to celebrate the values of materialism, competitiveness, and individualism. But our continuing adherence to these values

represents a major obstacle not only to our attempts to deal with our myriad social problems, but also to our attempts to realize a truly functioning democracy in the United States.

Revitalizing democracy and citizenship

At the risk of sounding like an alarmist, I'd like to suggest that our more arcane discussions of curriculum content sometimes make me wonder if we are just fiddling around while Rome burns. If higher education doesn't start giving citizenship and democracy much greater priority, then who will? Corporate business? The news media? The church? Politics? How can we ever expect the democratic dream to become more of a waking reality unless education changes its priorities? Some of my academic colleagues might respond that a "traditional liberal education" is the best thing we can do to prepare young people for the responsibilities of citizenship. While there may be some truth in that argument, the uncomfortable reality is that whatever we are currently doing--call it liberal learning if you like--simply isn't getting the job done. Most of our citizenry, and that includes most of our college-educated citizenry, seems neither to understand what democracy is all about nor to accept their individual responsibilities to make it work. And judging from the choices that those relatively few who do bother to vote make when they go to the polls, it seems clear that we have not done an effective job of showing our students how to avoid being bamboozled by politicians and the major news media. What I am really suggesting here is that the future of U.S. democracy is to a certain extent in our hands, and if we want to do anything to improve the current state of democracy, we have to change some of our ways of doing business.

It would be a mistake, I think, to construe my argument simply as an appeal to our sense of altruism or social responsibility. To get really pragmatic about it: Higher education has an enormous personal stake in producing graduates who understand the key roles that information and education play in our democracy. We continually need to remind ourselves that our students are the same people who will be voting on education bond issues and choosing among candidates who are either friendly or hostile toward education. The quality of their experience in our institutions will be a prime determinant of how they will view education later on.

What other societal institution has the resources, the understanding, or the will to undertake such a major rehabilitation and renewal of our faltering democracy? The point is simply this: We in the higher education community do not have to be content with simply griping about the conduct of the media and the ignorance of the electorate; we are actually in a position to do something about it.

In light of the reduced funding and other external pressures that many of us are experiencing today, it seems only fair to ask whether it's realistic to think that we have the wherewithal to undertake any new ventures such as I have been suggesting here. In our haste to man the barricades to defend ourselves against external threats, we are inclined to forget that the autonomy that we seek to protect may be the most powerful tool that we have for reshaping liberal education in the interests of promoting democracy and citizenship. There is no one standing in our way except ourselves. The fact remains that we still retain control over practically all of the decisions that really matter: whom to admit and how to admit them; what courses and what work to require of our students; what to teach, and how to teach it; how

we assess and evaluate our students; how we structure our cocurriculum programs; how we hire, reward, and tenure our colleagues; what policies and procedures we utilize to govern ourselves; and what subject matter we choose for our research and scholarship.

The implications here are clear: If we genuinely believe that it would be in our own best interests--not to mention those of our students and of the society that supports us--to introduce a central focus on democracy and citizenship into our curriculum and other campus activities, we have both the autonomy and the intellectual skill to do it.

PHOTO (BLACK & WHITE): Students from Hobart and William Smith Colleges during Celebrate Service day

PHOTO (BLACK & WHITE): Hollins College students from the Jamaica Service Project

PHOTO (BLACK & WHITE): The Catholic University of America

PHOTO (BLACK & WHITE): Students from Hobart and William Smith Colleges during Celebrate Service day

PHOTO (BLACK & WHITE): Students from Hobart and William Smith Colleges during Celebrate Service day

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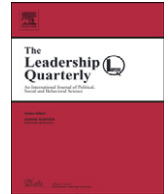
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# Advances in leader and leadership development: A review of 25 years of research and theory

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## ABSTRACT

The development of effective leaders and leadership behavior is a prominent concern in organizations of all types. We review the theoretical and empirical literature on leader and leadership development published over the past 25 years, primarily focusing on research published in *The Leadership Quarterly*. Compared to the relatively long history of leadership research and theory, the systematic study of leadership development (broadly defined to also include leader development) has a moderately short history. We examine intrapersonal and interpersonal issues related to the phenomena that develop during the pursuit of effective leadership, describe how development emerges with an emphasis on multi-source or 360-degree feedback processes, review longitudinal studies of leadership development, and investigate methodological and analytical issues in leader and leadership development research. Future research directions to motivate and guide the study of leader and leadership development are also discussed.

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## 1. Introduction and overview

Leadership development has emerged as an active field of theory building and research, providing a more scientific and evidence-based foundation to augment the long-standing practitioner interest in the topic. This emergence has transpired primarily over the last 10 to 15 years and *The Leadership Quarterly* has played a major role as an important outlet for this work. The purpose of this article is to review those advances, highlight their respective contributions, and identify areas in need of future research.

The purpose of this review is to identify advances in scholarly approaches to leader development (intrapersonal, focused on individual leaders), leadership development (interpersonal, focused on enhancing leadership capacity), and related topics that have been featured in this journal over the previous 25 years. The good news is that much has changed. There have been significant contributions to understanding leadership development (broadly defined to also include leader development) as well as multi-source or 360-degree feedback processes. The latter represent important process tools for enhancing leadership development. Although a lot of new knowledge has been generated in the previous 25 years, there is much more that needs to be learned. For that reason we will review the articles and special issues in *The Leadership Quarterly* since its beginning that have contributed to these scholarly advances. We will also highlight areas where additional focus is needed in terms of building a stronger evidence-based foundation for leadership development and feedback processes.

We begin by elaborating on how and why leadership development is different from the broader field of leadership theory and research. In doing so, we wish to demonstrate that more fully understanding leadership development goes far beyond merely

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choosing a particular leadership theory and training people in behaviors related to that theory. Leadership development is a complex topic that is deserving of scholarly attention with regard to theory and research independent of what has been studied more generally in the field of leadership.

The structure of this review is as follows. First, the content or the “what” of leadership development will be examined to summarize the phenomena that develop and what factors play a role in developing successful leadership skills and potential. This section will include *intrapersonal* factors (mainly relevant to leader development) as well as *interpersonal* factors (relating more to leadership development). Second, we consider process issues or the “how” in leadership development. The goal of this section is to describe the ways in which leadership development emerges in organizations and the practices that can be implemented to facilitate effective leadership. Third, we review a series of recent pieces that address aspects of longitudinal studies of leadership development. These are theoretical and empirical contributions that provide valuable insights into the longitudinal nature of leadership development. Fourth, we investigate how leadership development has been assessed or evaluated in the literature, thus promoting a scholarly understanding of evaluation methods in leadership development research. We conclude with an agenda for future research on the topic of leadership development. Whereas many of the pieces we review overlap multiple categories, our hope is that this structural framework provides a clear yet comprehensive understanding of the relevant theory and research pertaining to leadership development.

## 2. Leader and leadership development: research and theory

There is a relatively long history of leadership theory and research spanning more than a century (Avolio, Reichard, Hannah, Walumbwa, & Chan, 2009); however, in comparison, there is a fairly short history of rigorous scholarly theory and research on the topics of leader and leadership development. As noted by Day (2000), the distinction between developing leaders and developing leadership is potentially an important one. Leader development focuses on developing individual leaders whereas leadership development focuses on a process of development that inherently involves multiple individuals (e.g., leaders and followers or among peers in a self-managed work team). But given the keen attention paid to leadership theory historically, there appears to be a widespread misperception that if that the field could just identify and agree on the “correct” leadership theory then the development piece would inevitably follow. It turns out that this is not so simple. Developing individual leaders and developing effective leadership processes involve more than simply deciding which leadership theory is to be used to motivate effective development. This is so because human development involves a complex set of processes that need to be understood. Given that individual leader development occurs in the context of ongoing adult development (Day, Harrison, & Halpin, 2009), we need to focus on development as much as leadership to shed light on how this process unfolds.

One of the reasons leadership theory and research have contributed little to leadership development is a long-standing focus linking personality with leadership. If personality is conceptualized in terms of traits that summarize relatively enduring dispositional tendencies (House, Shane, & Herold, 1996), then its relevance for studying development (i.e., change) is questionable. Another popular approach in leadership research that is likewise limited in its developmental usefulness is the behavioral approach. Although behaviors can be learned, the primary intervention focus associated with leadership behaviors tends to be based on training rather than on longer-term development initiatives. Training typically involves providing proven approaches to solve known problems but the challenges facing contemporary leaders tend to be too complex and ill-defined to be addressed successfully through such relatively short-term training interventions. As a result of these challenges, the nascent fields of leader and leadership development tend to focus less on leadership theory and more on developmental science. In other words, there has been a change in focus associated with studies of leadership development broadly defined, away from leadership research and toward understanding and enhancing developmental processes.

Another important difference is that the nature of leadership development is inherently multilevel and longitudinal (Day, 2011). Specifically, studying development involves mapping and understanding within- and between-person change patterns – as well as those involving groups, teams, and larger collectives – over time. To contribute to greater understanding of how leaders and leadership processes develop and change, relevant theory and research should reflect both the multilevel and the longitudinal nature of development. This longitudinal, multilevel focus means that intrapersonal and interpersonal processes are central to leadership development over time.

## 3. Intrapersonal content issues in development

In terms of intrapersonal content (see Table 1 for a summary), a relevant question is what develops as a function of leader development? Additionally, are there individual differences that affect these interventions? Researchers such as Lord and Hall (2005) have noted the importance of individual identity in developing leadership skills and expertise as part of the leader development process. Other researchers have examined issues of cognitive and metacognitive skills at the core of leadership potential (Marshall-Mies et al., 2000), as well as various approaches to understanding the underlying patterns of leadership skills (Mumford, Campion, & Morgeson, 2007; Mumford, Marks, Connelly, Zaccaro, & Reiter-Palmon, 2000; Mumford et al., 2000). Moreover, the role of personality has also been examined as a predictor of leadership styles (deVries, 2012) as well as leader performance (Strang & Kuhnert, 2009). All of these issues involving skills, experience, learning, and personality are central to the notion of developing the expert leader (Day et al., 2009; Lord & Hall, 2005). Research and theory on leader self-development also contribute to our conceptual understanding of intrapersonal content issues.

**Table 1**

Intrapersonal and interpersonal content issues in leadership development.

| Topics                 | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Source                                                                                                                                                            |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Intrapersonal</i>   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                   |
| Experience and leaning | Leaders' previous work history as well as the leadership relevance of previous positions held (as opposed to tenure) should be considered in decisions about the kinds of experiences that enhance leader development.<br>Leadership development occurring in adolescence can be shaped, in part, by parental modeling.<br>A leader's level of experience plays a role in determining how much he or she will learn, but at the same time, not all leaders learn at the same rate or in the same way.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Bettin and Kennedy (1990)<br>Zacharatos et al. (2000)<br>Hirst et al. (2004)                                                                                      |
| Skills                 | Although certain kinds of experience may encourage skill development at one point in time in a leader's career, others might be more advantageous at a different time.<br>Whereas individuals with specific skill types are more inclined to hold senior level leadership positions (such as those who scored high on achievement), there is still a fair amount of diversity in terms of ability, personality, and motivational characteristics across leaders at the same level.<br>Six skills relevant for creative problem solving of high-level leaders include general problem solving, planning and implementation, solution construction, solution evaluation, social judgment, and metacognitive processing (i.e., knowledge of one's cognitive processes).<br>As leaders assume more senior positions in an organizational, the acquisition of strategic and business skills will be more important for effective performance than the acquisition of interpersonal and cognitive skills.<br>Effective leadership entails developing and integrating wisdom, intelligence, and creativity.<br>Identity, meta-cognitive, and self-regulation processes are crucial to the refinement of knowledge structures and information processing capabilities associated with leadership expertise. | Mumford, Marks et al.(2000)<br>Mumford, Zaccaro et al. (2000)<br>Marshall-Mies et al. (2000)<br>Mumford et al. (2007)<br>Sternberg (2008)<br>Lord and Hall (2005) |
| Personality            | Conscientiousness can be a significant predictor of leader performance.<br>Different patterns of personality tend to be more equally representative at junior level leadership positions compared to more senior level positions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Strang and Kuhnert (2009)<br>Mumford, Zaccaro et al. (2000)                                                                                                       |
| Self-development       | Work orientation, mastery orientation, and career-growth orientation facilitate leader self-development activities.<br>Specific organizational-level (i.e., human resources practices) and group-level (i.e., supervisor style) constructs can promote leader self-development.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Boyce et al. (2010)<br>Reichard and Johnson (2011)                                                                                                                |
| <i>Interpersonal</i>   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                   |
| Social mechanisms      | The creation of positive learning environments in which education about other groups occurs, innovation is supported, and cultural communication competence is encouraged, facilitates high quality relationships in diverse leader–member dyads.<br>Leadership development practices can shape social capital development stages (such as networking, mentoring, leadership training, and job assignments) in a variety of ways.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Scandura and Lankau (1996)<br>Galli and Müller-Stewens (2012)                                                                                                     |
| Authentic leadership   | Authentic leadership development involves “ongoing processes whereby leaders and followers gain self-awareness and establish open, transparent, trusting and genuine relationships, which in part may be shaped and impacted by planned interventions such as training” (p. 322).<br>The positive outcomes of authentic leader–follower relationships include heightened levels of follower trust in the leader, engagement, workplace well-being, and sustainable performance.<br>Authentic leaders develop authentic followers through positive modeling.<br>Positive other-directed emotions (e.g., gratitude, appreciation) will motivate authentic leaders to behave in ways that reflect self-transcendent values (e.g., honesty, loyalty, and equality).<br>The attainment of relational authenticity, wherein followers afford leaders the legitimacy to promote a set of values on their behalf, is challenging for many women in positions of authority, and thus, the development of women leaders should focus on the relational aspects of achieving authenticity as a leader.<br>There is a need for empirical evidence evaluating the underlying principles of authentic leadership theory.                                                                                          | Avolio and Gardner (2005)<br>Gardner et al. (2005)<br>Ilies et al. (2005)<br>Michie and Gooty (2005)<br>Eagly (2005)<br>Cooper et al. (2005)                      |

### 3.1. Experience and leaning in development

Although there is a long-held assumption on the part of both practitioners and researchers that experience plays an important role in developing effective leadership, research suggests that the empirical evidence for this assumption is far from definitive (Day, 2010). Leadership involves a complex interaction between people and their social and organizational

environments (Day, 2000). Therefore, simply correlating a leader's performance with the number of months he or she has been in a job or organization is inadequate (i.e., contaminated and deficient) in capturing the full effects of something as nuanced as experience.

Bettin and Kennedy (1990) addressed these conceptualization and measurement concerns by examining several different ways that experience can be measured in organizations. They argued that a limitation in the research on experience and leader development is the use of tenure or length of time in a job or organization as a proxy for experience. They studied biographies of 84 U.S. Army Captains who all had very similar years of experience. Experience was assessed by experts who rated the biographies according to the knowledge, skills, or practice that the Captains gained from their current position and the leadership relevance of previous positions. When measured in this manner, experience was found to be a significant predictor of leadership performance; however, time in service and number of previous positions were unrelated to leadership performance.

The results of the Bettin and Kennedy (1990) study suggested that whereas time and experience are not mutually exclusive – it does take time to gain experience – it is important for scholars to be mindful that using time as a proxy for experience is limited. Moreover, the authors offered leadership scholars an appropriate conceptualization of experience as the relevant skills, knowledge, and practice acquired while holding various jobs that may be relevant to research on the role of experience in leader development. These findings also have practical implications in terms of taking into account individuals' previous work history as well as the leadership relevance of the previous positions held in making decisions about the kinds of experiences that enhance leader development.

Zacharatos, Barling, and Kelloway (2000) extended this focus on individual experience and leader development by studying adolescents' observations of transformational leadership behaviors exhibited by their respective parents and how this experience was associated with their leadership effectiveness within a team context. Transformational leadership (Bass & Riggio, 2006) is conceptualized around four interrelated components: (a) idealized influence, (b) inspirational motivation, (c) intellectual stimulation, and (d) individualized consideration, and is one of the most frequently studied leadership approaches in the leadership literature (Day & Antonakis, 2012). To better understand how transformational leadership behaviors develop in youths, Zacharatos et al. (2000) invoked social learning theory to explain the influence that parental modeling can have on the development of adolescents' leadership. The research focused on a sample of 112 Canadian high school students who were members of different sports teams. Adolescents' perceptions that their parents demonstrated transformational leadership behaviors were associated with a greater likelihood that these adolescents exhibited similar leadership behaviors. Also, those adolescents who displayed transformational behaviors were rated as more satisfying, effective, and effort-evoking leaders by their peers and coaches in their particular team context. In terms of leadership development, this study suggests that development of leadership (particularly transformational leadership) can start in adolescents and is likely shaped, in part, by parental modeling.

In a year-long empirical study of R&D teams, Hirst, Mann, Bain, Pirola-Merlo, and Richter (2004) examined the role of learning and individual differences in the development of facilitative leadership behaviors. Facilitative leadership endorses respect and positive relationships among team members, constructive conflict resolution, and candid expression of thoughts and attitudes. The authors grounded their hypotheses in action learning theory, proposing that leaders “learn from challenging work, from solving complex problems, and from leading a team, and that they use this knowledge to foster team communication and enhance team performance” (p. 321). But not all leaders learn at the same rate or in the same way. The authors supported their contention that leaders who are better able to learn from their experiences tended to engage in greater levels of facilitative leadership. This learning of facilitative leadership behaviors was, in turn, associated with higher levels of team reflexivity and performance.

Hirst et al. (2004) also found support for their hypotheses that a leader's level of experience will determine how much he or she will learn and, further, experience will moderate the relationship between leadership learning and facilitative leadership. Less experienced leaders simply have more to learn and are more likely to encounter novel situations than their more veteran counterparts. The schemas and implicit leadership theories of inexperienced leaders are likely to be less complex or crystallized, and thus are more amenable to change. This is not meant to suggest that experienced leaders are incapable of learning or translating that learning into their leadership behaviors, but rather that they must work harder to integrate new knowledge into their established cognitive frameworks. Another important finding from this research involved the time lag (ranging from 4 to 8 months) between leadership learning and facilitative leadership behavior enactment. The authors surmised that this “may reflect the interval between gaining new insight and grasping an understanding of how best to translate this knowledge into leadership behavior” (p. 322). In other words, it takes time for leaders to progress from a conceptual understanding of their facilitative role to the procedural expression of their leadership competence through specific facilitative behaviors.

### 3.2. Skills and development

At the turn of the 21st century, leadership scholars began focusing attention on the particular leadership skills that can be acquired through development processes. For instance, Mumford, Marks et al. (2000) and Mumford, Zaccaro et al. (2000) used U.S. military samples to examine the skills acquired over the course of a leader's career and how these skills are acquired. The researchers examined complex problem-solving skills, creative thinking skills, social judgment skills, solution construction skills, and leader knowledge or expertise. In order to describe changes in these skills from lower to higher level leadership positions, Mumford, Marks et al. (2000) illustrated that scores on assessments of these skills increased from junior-level positions (e.g., second

lieutenant, first lieutenants, and junior captains) to mid-level positions (e.g., senior captains and majors) and from mid-level to upper-level positions (e.g., lieutenant colonels and colonels). They also found that certain skills were more important at certain phases of a leader's career. In particular, technical training was found to be more strongly related to skill increases moving from junior to mid-level positions whereas more advanced professional training was more strongly related to increases in requisite complex problem-solving skills as leaders moved from mid-level to more senior positions.

The findings of Mumford, Marks et al.'s (2000) study of differences in leadership skills across six grade levels of officers in the U.S. Army offer useful theoretical and practical implications for those interested in leadership development. Specifically, their findings supported their proposed organization-based model of leader skill development, which suggests that skill development depends on learning as people interact with their environment. It also explains that skill development can occur over a long period of time and that this process is progressive, moving from simple aspects of development to more complex, integrated components. These findings also suggest that whereas certain kinds of experience may encourage skill development at one point in time in a leader's career, others might be more beneficial at a different time. Thus, they recommended that training assignments should be carefully tailored to current developmental needs, which, of course, is easier said than done.

In a related study, Mumford, Zaccaro et al. (2000) were interested in identifying types or subgroups of individuals entering into the U.S. Army according to ability, personality, and motivational characteristics, as well as determining which of these types were found in more senior positions. They identified seven different types of individual profiles: *Concrete Achievers* were those high on achievement and planning; *Motivated Communicators* were extraverted, dominant, responsible, and high in achievement needs; *Limited Defensives* were introverted, and scored high in areas of sensing, thinking, and judging; *Disengaged Introverts* were also introverted but scored high on intuition, perception, and planning; *Social Adaptors* were extraverted, and scored high in feeling, perception, and openness; *Thoughtful Innovators* were introverted, intuitive, achievement-oriented, and open; and *Struggling Misfits* were those who did not score high on any of the measures.

Results suggested that all seven of these groups were well represented in junior officers, with at least 10% to at most 20% of the officers being found in each subgroup. Whereas group representation was more uniform at the junior officer level, a different pattern of group membership emerged at the more senior level. Specifically, members of three of the subgroups – Motivated Communicators, Thoughtful Innovators, and Social Adaptors – were represented with greater or equal frequency at the senior officer level compared to the junior officer level, with Motivated Communicators and Thoughtful Innovators being especially pronounced with 40% and 26% of the sample, respectively. These findings suggest that whereas individuals with specific skills types are more apt to hold upper level leadership positions there is still a good deal of diversity in terms of ability, personality, and motivational characteristics among leadership incumbents at the same level. The authors encouraged practitioners and scholars to recognize that the development process is holistic in nature and that different types of people will be needed to fill different types of organizational leadership roles.

In an effort to identify and appropriately measure specific skills related to effective senior-level leaders, Marshall-Mies et al. (2000) created and tested an on-line computer-based cognitive and metacognitive (i.e., knowledge of one's cognitive processes) skill assessment battery called the Military Leadership Exercises. In doing so, they first identified complex cognitive and metacognitive skills relevant for creative problem solving in high-level leaders. The cognitive skills included general problem solving, planning and implementation, solution construction, solution evaluation, and social judgment. Metacognitive processing was measured as individuals' awareness of prior understandings as evidenced by their ability to reevaluate these understandings over time in light of new information. The skills were assessed using complex and domain-specific (i.e., geared towards the military) situational leadership scenarios, which were used to predict performance outcomes. This study contributes to our understanding of leader development by describing skills that are important to senior-level leaders as well as by providing a way in which these skills can be measured.

Other researchers have since investigated different patterns of skills that are important to leaders and leadership development. In particular, Mumford et al. (2007) presented four leadership skill requirements (cognitive, interpersonal, business, and strategic) as a *strataplex*, conceptualized as layered (strata) across the organization and segmented (plex) into a specified number of parts. Findings from their study on approximately 1000 junior, midlevel, and senior managers supported the proposed strataplex approach and demonstrated that specific skill requirements vary by organizational level. In addition, they proposed that as managers are promoted to more senior roles, the acquisition of strategic and business skills will be more important for effective performance than the acquisition of interpersonal and cognitive skills.

Sternberg (2008) provided a WICS approach to leadership, which refers to Wisdom, Intelligence, and Creativity Synthesized. This approach is grounded in the notion that effective leadership entails developing and integrating these three types of skills (wisdom, intelligence, and creativity) that all play an important role in decision making. Accordingly, leadership is a process that involves generating ideas (creativity), then analyzing whether the ideas are good or not (intelligence), and then, ideally, acting on the ideas in a way to achieve a common good (wisdom). Sternberg recommends that one way that leadership potential can be developed is through identifying and encouraging this kind of synthesis.

Lord and Hall (2005) proposed that leadership development is predicated on progressive skills development. Their approach is based on a general theory of learning and expertise, which suggests that changes in information processing and underlying knowledge structures occur as skills are gradually refined. Thus, through the process of skill development a leader advances through novice, intermediate, and expert skill levels. Each level requires increasingly sophisticated knowledge structures and information processing capabilities within broadly defined task, emotional, social, and self-relevant realms. Compared to Hirst et al. (2004), who examined less experienced leaders against more experienced leaders, Lord and Hall focused on the underlying processes involved in moving from a novice (i.e., inexperienced) to an expert (i.e., highly experienced) leader.

The development of leadership skills also requires self-motivation. In that regard, identity, meta-cognitive, and self-regulation processes are thought to be crucial to the refinement of knowledge structures and information processing capabilities associated with leadership expertise. Through the course of development, identity progresses from the individual level, in which the self is defined in terms of uniqueness from others, to the relational level, in which the self is defined in terms of roles and relationships, to the collective level, in which the self is defined in terms of group or organizational affiliations (Lord & Hall, 2005). Concomitant development of meta-cognitive skills enables better knowledge access, goal formation, action, and social reactions, which frees up cognitive resources that can be directed toward effective self-regulation. Self-regulation involves the control and communication of emotions to others. As a leader's skills progress into the expert domain over time, the identity and behaviors of a leader are increasingly guided by understanding the situation and collaborating with others.

### 3.3. Personality and development

Research has found certain personality traits to be predictive of effective leadership. For example, Strang and Kuhnert (2009) found that the Big Five personality factor of conscientiousness significantly predicted of leader performance as measured by the average rating of three sources (subordinate, peer, and supervisor). Moreover, Mumford, Zaccaro et al. (2000) suggested that patterns of personality can have an impact on leader skill development and performance. Nonetheless, if personality changes relatively little compared with other personal characteristics in adulthood, then it makes sense to evaluate their predictive value in terms of leadership performance. Other approaches will be discussed that examine more malleable constructs that are thought to change as part of leader development processes (e.g., self-efficacy).

### 3.4. Self-development

In terms of understanding leader self-development, Boyce, Zaccaro, and Wisecarver (2010) addressed the relative lack of research on the personal characteristics of individuals who engage in leadership self-development activities. Through an empirical examination of junior military leaders, the authors supported a conceptual model in which dispositional characteristics differentially predict leader development activities. The individual characteristics found to be associated with leader development activities were *work orientation* (e.g., job involvement and organizational commitment); *mastery orientation* (greater self-efficacy, conscientiousness, openness to experience, and intellectual maturity); and *career-growth orientation* (greater career exploration and feedback seeking behaviors). Depending on the strength of their mastery and work orientations, individuals were more or less motivated to engage in self-development activities. Those individuals with a stronger career growth orientation were found to be more skilled at performing self-development activities. Overall, the results indicated that work orientation, mastery orientation, and career-growth orientation play key roles in leader self-development.

Further addressing the scarcity of research in the area of self-development of leadership skills, Reichard and Johnson (2011) proposed a multi-level model of leader self-development that describes how leaders are “transformed into continuous self-developers” (p. 34). In this model organizational-level constructs such as human resources practices and resources are linked with group-level phenomena such as norms, supervisor style, and social networks to promote leaders' motivation to develop their leadership and to engage in continuous self-development behavior. Specifically, HR processes (selection, training, and performance appraisal) create group norms (learning, responsibility, and openness), and support the development of individual leader skills and abilities. These individual-level leader characteristics are moderated by supportive group norms to engender an individual's motivation to develop leadership and to engage in continuous self-development. The authors assert that “leader self-development is a cost-effective way for organizations to develop leaders resulting [potentially] in a competitive edge” (p. 33).

## 4. Interpersonal content issues in development

Given that leadership development is a dynamic process involving multiple individuals spanning various levels of analyses, the content aspects of this process include a variety of interpersonal factors (see Table 1). One such approach to understanding the content of leadership development includes a focus on the development of leader–member exchange (LMX) quality. Another relevant approach examines how leadership development practices shape the development of social capital in organizations. Relatedly, a special issue on authentic leadership emphasized the interactive leader–follower quality of authentic leadership and provided developmental strategies related to this leadership approach.

### 4.1. Social mechanisms and development

Leadership development emphasizes the enactment of leadership built on a foundation of mutual trust and respect (Day, 2000). As a result, it is important to understand the development of social interactions that occur within the leadership process. For instance, Boyd and Taylor (1998) conceptually evaluated how the presence of friendship contributes to either effective or ineffective working relationships in the LMX process. Scandura and Lankau (1996) further extended research on LMX by including the potential role that gender and race relations may play in the process of forging effective exchange qualities. More specifically, these authors described how certain social psychological processes (e.g., self-knowledge, interpersonal skills, communication competence, and cultural competence) and contextual influences (e.g., organizational climate/culture, group/organizational composition, economic environment, and organizational support for diversity) moderate the development of high quality relationships in diverse leader–



member dyads. They highlighted the importance of leaders creating positive learning environments in which learning about other groups occurs, innovation is supported, and cultural communication competence is encouraged. From this, individuals create more integrated self-concepts that include both intrapersonal and interpersonal dimensions.

More recently, Galli and Müller-Stewens (2012) demonstrated how leadership development practices shape the development of social capital in organizations. In contrast to human capital, which focuses primarily on individual leader attributes (i.e., knowledge, skills, and abilities), social capital considers connections and interactions among individuals within a social context. In an effort to understand how leadership development potentially impacts organizational performance, the authors adopted a case study approach to examine the development of social capital at more strategic levels of the firm. They found that social capital differs regarding its intensity and progresses through stages characterized by contact (e.g., networks, off-sites, mentoring), assimilation (e.g., leadership training, 360-degree feedback), and identification (e.g., job assignments, action learning). Also, their results suggest that leadership development practices vary in their potential impact on social capital development stages; thus, they should be designed accordingly.

#### 4.2. Authentic leadership development

In a special issue of *The Leadership Quarterly* on the topic of authentic leadership, Avolio and Gardner (2005) noted that authentic leadership development involves “ongoing processes whereby leaders and followers gain self-awareness and establish open, transparent, trusting and genuine relationships, which in part may be shaped and impacted by planned interventions such as training” (p. 322). Thus, the development of authentic leadership is conceptualized as a more complex process than just the development of authentic leaders. The former involves the development of an authentic relationship (i.e., social capital focus) between leaders and their followers; in contrast, the development of authentic leaders is more intrapersonal in nature (i.e., human capital focus).

Avolio and Gardner (2005) highlighted the environmental and organizational forces that have generated interest in the study of authentic leadership and its development. They described the similarities and defining features of authentic leadership theory in comparison to other perspectives of leadership (e.g., transformational, charismatic, servant, and spiritual leadership). In this vein, a model of the relationships between authentic leadership, follower development, and follower performance was presented (Gardner, Avolio, Luthans, May, & Walumbwa, 2005). The proposed model highlighted the developmental processes of leader and follower self-awareness and self-regulation, as well as the influence of the leaders' and followers' personal histories on authentic leadership and followership. The model also considered the reciprocal effects of an inclusive, ethical, and compassionate organizational climate. Positive modeling was viewed as the primary mechanism through which leaders developed authentic followers and the outcomes of authentic leader–follower relationships included heightened levels of follower trust in the leader, enhanced engagement and workplace well-being, as well as more sustainable performance. Although this approach is commendable for including both leaders and followers in the development process, it is unclear what it offers beyond the well-established effects of leader–member exchange (LMX) theory. Future tests of authentic leadership development will need to control for LMX in demonstrating a unique contribution to the establishment of authentic relationships.

Ilies, Morgeson, and Nahrgang (2005) presented a somewhat different model of authentic leader development that focused on the elements of authenticity and the processes through which authentic leadership contributes to the well-being of both leaders and followers. Authentic leaders are expected to consider multiple sides and multiple perspectives of an issue, and gather related information in a relatively balanced manner. Similar to what was proposed by Gardner et al. (2005), the focus is on positive modeling as the primary means used by authentic leaders to influence followers and to generate well-being as a positive outcome of authenticity.

Researchers have also stressed the importance of values and behaviors to the understanding and development of authentic leadership. In an investigation of the effects of emotions and values on leader authenticity, Michie and Gooty (2005) posited that emotions and values play a fundamental role in the emergence and development of authentic leadership. The authors' central thesis was that positive other-directed emotions (e.g., gratitude, appreciation) motivate authentic leaders to behave in ways that reflect self-transcendent values (e.g., honesty, loyalty, equality). By stressing the importance of emotions in understanding leadership and followership, this approach represented a somewhat different and novel perspective on the development of authentic leadership.

To further explore the boundary conditions of authentic leadership theory, Eagly (2005) presented a relational view of authenticity in arguing that much more is required of leaders than transparently conveying and acting on their values. Achieving relational authenticity is thought to require that followers afford leaders the legitimacy to promote a set of values on their behalf. Leaders are able to elicit the personal and social identification of followers only when these conditions exist. Eagly suggested that eliciting identification is more difficult for female than male leaders, as it is more generally for members of outsider groups (e.g., minorities, non-natives) who have not traditionally had access to leadership roles. Because of the interactive effects of gender role and leader role requirements, achieving relational authenticity is challenging for many women in positions of authority. The development of women leaders should therefore focus on the relational aspects of achieving authenticity as a leader. Trends toward participative decision making and transformational leadership may also increase the probability that women and other outsiders will achieve success as leaders.

In a critique of authentic leadership approaches, Cooper, Scandura, and Schriesheim (2005) advised researchers in this area to learn from the mistakes made in other areas of leadership research. They suggested that the core propositions of this theory must first be tested by studying the developmental processes that encompass authentic leadership. Authentic leadership theory, therefore, must be examined through experimental investigations of the hypothesized relationships between its core development



processes and essential theoretical constructs. Until the theory has been properly tested (including controlling for the effects of LMX), the authors warned against a rush to push authentic leadership development in practice.

## 5. Process issues in leadership development

Researchers have also addressed the role of *process* in leader and leadership development (see Table 2 for a summary of this literature). Specifically, process factors are those that shape the rate or pattern of development over time. In general, these factors can emerge through organizational practices such as mentoring and coaching, 360-degree feedback, leadership training, job assignments, and action learning among others. In particular, research and theory appearing in *The Leadership Quarterly* has contributed significantly to shaping our scholarly understanding of feedback processes, especially 360-degree feedback. Other process factors related to leadership development that have received attention in this journal include self-other agreement (Fleenor, Smither, Atwater, Braddy, & Sturm, 2010) and the use of narratives and life stories (Ligon, Hunter, & Mumford, 2008; Shamir & Eilam, 2005).

### 5.1. Feedback as a process of development

Corresponding with the emergence of leadership development as a scholarly field of interest, the use of 360-degree feedback as a developmental process to foster self-awareness and competency development has become a major area of research. 360-degree feedback has become almost ubiquitous in organizations of every type (e.g., corporate, government, non-profit, military, education) and is a prominent process for facilitating development. If used as intended, 360-degree feedback can help people understand systematically the impact of their behavior on others. In general, the approach gathers and reports on ratings of leader behavior and/or effectiveness from multiple sources such as subordinates, peers, bosses, and possibly even external stakeholders such as customers, in addition to self-ratings. These ratings are usually aggregated and therefore remain anonymous,

**Table 2**

Process issues in leadership development.

| Topics               | Summary                                                                                                                                                                                                                                                                                                                                              | Source                                                                  |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| 360-degree feedback  | It is important to consider the pattern of strategic, organizational, and HR-related factors that must be integrated in order to link feedback results to organizational performance. Merely assuming that giving a leader feedback will result in a behavioral change, and ultimately organizational performance improvement, is overly simplistic. | Atwater and Waldman (1998)                                              |
|                      | Leaders' reactions to 360-degree feedback vary as a function of the feedback content as well as other factors about the raters and the organizational climate, including whether or not recipients felt the organization was supportive of their developmental efforts.                                                                              | Facteau et al. (1998)                                                   |
|                      | Leaders who are high self-monitors do not receive higher 360-degree feedback ratings, suggesting that the impression management styles of high self-monitors do not significantly influence 360-degree ratings.                                                                                                                                      | Warech et al. (1998)                                                    |
|                      | The administration of two feedback interventions has the ability to improve leader effectiveness more so than a single administration of a feedback intervention.                                                                                                                                                                                    | Seifert and Yukl (2010)                                                 |
|                      | In terms of how political leaders respond to criticism, others' supportive reactions are positively related to collaboration and persuasion strategies as a response to criticism, whereas diverting attention and persuasion are related to unsuccessful resolution of the issue.                                                                   | Eubanks et al. (2010)                                                   |
| Self-other agreement | While most leadership development programs have improved leader effectiveness as an ultimate goal, the main roles associated with effective leadership differ according to who is being asked (e.g., focal manager, peers, subordinates, or bosses); hence, effectiveness may be in the eye of the beholder (or evaluator).                          | Hooijberg and Choi (2000)                                               |
|                      | Leaders who rate themselves similarly to how others rate them are likely to be more effective leaders.                                                                                                                                                                                                                                               | Atwater and Yammarino (1992)                                            |
|                      | Self-other agreement does not appear to be related to leadership effectiveness. There is a link between rating agreement and leader effectiveness.                                                                                                                                                                                                   | Fleenor et al. (1996)<br>Atwater et al. (1998)<br>Fleenor et al. (2010) |
| Self-narrative       | Whereas self-other agreement appears to be related to leader effectiveness, its relationship to leadership outcomes is complex. Also, self-other agreement can be an important factor in increasing the self-perception accuracy or self-awareness of individuals participating in leadership development programs using multi-source assessments.   |                                                                         |
|                      | Authentic leaders can gain self-knowledge, self-concept clarity, and person-role merger, by constructing, developing, and revising the personal narratives they construct about themselves (i.e., life stories).                                                                                                                                     | Shamir and Eilam (2005)                                                 |
|                      | Continuously revising and updating self-narratives as experiences accrue through written journals or other similar techniques can help enhance the effectiveness of programs and interventions that seek to increase self-awareness.                                                                                                                 | Sparrowe (2005)                                                         |
|                      | Various leader performance dimensions can be linked to certain types of experiences. For example, experiences that create optimistic views of others and empathy for their suffering are strongly related to outstanding leader performance.                                                                                                         | Ligon et al. (2008)                                                     |

with the exception of ratings provided by the supervisor. A major part of the feedback process is in understanding where the perceptions across different sources converge – as well as diverge – in their perceptions of a focal manager (Hoffman, Lance, Bynum, & Gentry, 2010). Attention is also given to how others' ratings correspond with a leader's self-ratings. The intended focus is typically on leader development but may also include an evaluative component in some organizations. As 360-degree feedback has evolved as an evidence-based process, much of its developmental focus is on identifying leadership skills and competencies that are perceived by various sources to be effective or ineffective.

Because of the interconnected nature of leadership development with 360-degree feedback, these topics will be reviewed together. But to clarify their relationship, leadership development is inherently longitudinal in terms of studying individual and collective change over time; it is multilevel in focusing on intrapersonal and interpersonal changes; and 360-degree feedback is a process used to facilitate this development. It should also be made clear that 360-degree feedback is not a tool such as a personality assessment or other type of psychological inventory. Instead, it is a process of collecting multisource ratings, summarizing these data into an accessible format, and presenting these summaries as a way of fostering self-awareness and the development of individual leaders. This feedback process might be used with larger collectives such as teams and organizations, but its primary use is with individual leaders.

Although many of the articles pertaining to 360-degree feedback and leader development have been published in more practitioner-oriented journals, *The Leadership Quarterly* has published a variety of empirically-based articles on the subject of feedback and its relevance to leadership development. One of the fundamental components of effective leadership is self-awareness or self-understanding. Ashford (1989) wrote eloquently on the topic of feedback-seeking behavior and on the importance of recognizing how one is perceived by others in order to develop a more accurate self-view. This self-view subsequently shapes an understanding of one's own strengths and weaknesses, ultimately influencing decision-making and subsequent behavior. The importance of accurate self-assessment (i.e., enhanced self-awareness) has been extended recently to meta-perceptions, which concern not only how an individual views himself or herself and how others view that individual, but also how the individual thinks others view him or her (Taylor & Hood, 2011).

In the 1990s, interest in the process and outcomes of 360-degree feedback gathered momentum. The use of 360-degree feedback as a development tool was being implemented with varying degrees of success around the world and a number of research questions about what influenced its success were being asked. In an attempt to summarize and highlight what was known about 360-degree feedback from a scholarly perspective, Atwater and Waldman (1998) edited a special issue on 360-degree feedback and leadership development for *The Leadership Quarterly*. Unfortunately, implementation of 360-degree feedback was apparently ahead of research on its effectiveness in that only two studies were published on the topic in that special issue. But notably, this special issue was one of the first publications to highlight areas in which more research was needed on the use of 360-degree feedback for leadership development. Additionally, the issue was noteworthy for its focus on the potential impact of organizational culture on the implementation of 360-degree feedback processes.

In their introduction to the special issue, Atwater and Waldman (1998) recommended that researchers adopt configural approaches to 360-degree feedback by considering the pattern of strategic, organizational, and human resources-related factors that must be integrated in order to link feedback results to organizational performance. Merely assuming that giving a leader feedback will result in a behavioral change, and ultimately organizational performance improvement, is overly simplistic. Atwater and Waldman also suggested that researchers closely examine the link between 360-degree feedback and organizational culture. For example, 360-degree feedback initiatives may be effective only in organizations that have a culture of innovation, behaviorally-based appraisal practices, and developmental strategies. In an attempt to change their culture, some organizations may adopt 360-degree feedback in hopes that these practices will result in employees becoming more open, participative, and trusting. Nonetheless, it is an empirical question whether 360-degree feedback can have positive effects on organizational culture. It might be that a 360-degree feedback process would not be successful until the organization has an open, participative, and trusting culture. This was one of the areas in which the guest editors cited the need for more research on 360-degree feedback.

Another area in need of research was related to the determinants and consequences of developmental goal setting that arise as a result of receiving 360-degree feedback. In an attempt to partially address this need, Fecteau, Fecteau, Schoel, Russell, and Poteet (1998) examined factors related to leaders' reactions to 360-degree feedback. Positive reactions to feedback are an important element in the success of 360-degree feedback in that such reactions likely result in leaders seeking additional feedback and setting developmental goals, both of which are critical to fostering development. Lacking favorable reactions to the feedback, positive behavior change is unlikely to occur.

Fecteau et al. (1998) hypothesized that higher overall other ratings, organizational support, and perceived rater ability would be positively related to the reactions of feedback recipients (acceptance and perceived usefulness of peer and subordinate feedback). Their findings were somewhat mixed. Although they found that overall ratings were positively related to the acceptance of feedback, these ratings were not consistently related to perceived feedback usefulness. For example, the recipient may be very accepting of positive ratings but not find them terribly useful. Whether the feedback was perceived as useful had more to do with the degree to which the recipients felt the organization was supportive of their developmental efforts. Overall, this study provided early evidence that leaders' reactions to 360-degree feedback vary as a function of the feedback itself as well as other factors about the raters and the organizational climate. Differences in the reactions of the participants to the feedback, therefore, were not simply attributable to the overall ratings provided to these leaders. The study concluded that organizations that wish to implement successful 360-degree feedback systems will need to consider all of the various factors that may contribute to the leaders' reactions to feedback.

Reporting on the positive effects of 360-degree feedback for leadership development, Warech, Smither, Reilly, Millsap, and Reilly (1998) studied the relationship between leader self-monitoring, personality, and 360-degree feedback ratings from peers and subordinates. This was an important question to address because it would be disconcerting if a leader's degree of self-monitoring (i.e., the desire and ability to fashion a positive image for a particular situation) explained a large amount of variance in 360-degree ratings. That is, if self-monitoring and 360-degree ratings were highly related it might be concluded that such ratings were manipulated to some extent by the impression management styles of high self-monitors. Encouragingly, the authors found that leaders who were high self-monitors did not receive higher overall ratings, thus providing some assurances that 360-degree feedback ratings reflected mainly perceptions of leadership behaviors rather than the result of active impression management.

Atwater and Waldman (1998) recognized that these studies made significant contributions to our understanding of 360-degree feedback and leadership development but stressed that much more work remained to be done in this area. In particular, it was suggested that future research should focus more squarely on the outcomes of 360-degree feedback. Examples of such outcomes included: (a) the extent to which 360-degree feedback initiatives can affect organizational performance; (b) how often 360-degree feedback should be administered to maintain participant interest and continue the developmental process; and (c) the points in leaders' careers at which 360-degree feedback will have the most impact. For the most part, these still remain important but largely unexamined research questions.

Seifert and Yukl (2010) did address one of the questions posed above in terms of repetition of the feedback process. They conducted a longitudinal field experiment of middle managers in which half of the managers received one developmental workshop including 360-degree feedback and the other half participated in a follow-up workshop where they received feedback a second time. In each workshop they were provided with a feedback report of their self and other ratings of their influence tactics, as well as a discussion to help them understand the results of the feedback and ways to use it to more effectively influence others in the future. The managers' overall effectiveness was measured pre-feedback as well as post-feedback. The pre-feedback effectiveness ratings did not differ in the two groups; however, at the second measurement period those who participated in two feedback processes were rated as significantly more effective following feedback than those who received feedback only once. This suggests that additional resources allocated to the feedback process (e.g., doubling the number of feedback sessions) has the potential to improve leader effectiveness. A question that deserves future research attention concerns whether there is compelling economic or financial utility associated with increasing the number of feedback sessions provided to a leader.

Eubanks et al. (2010) took a different approach to looking at feedback in examining how political leaders respond to criticism. They used a historiometric approach to study biographies of 120 world leaders and how the response strategies to the criticism used by the leader related to success in terms of follower reactions and resolution of an issue. Their results demonstrated that others' supportive reactions were positively related to collaboration and persuasion strategies as a response to criticism, whereas diverting attention and persuasion were related to unsuccessful resolution of the issue. Regarding the ultimate conclusion of the event, both collaboration and confrontation were positively related to the outcome although confrontation was also negatively related to unsupportive reactions by others. It is interesting to speculate about strategies that have differing results for popular opinion versus effective resolution. One could speculate that strategies such as persuasion might be used to influence attitudes while ineffectively resolving the issue. The authors suggested that future research might examine events in which leaders receive praise, the types of behaviors that are praised, as well as follower reactions to the praise. In the political arena – especially in democratic countries – criticism and praise will likely elicit very different reactions depending on whether or not members are from one's own political party or an adversarial party.

Most leadership development programs target, as an ultimate goal, improved leader effectiveness. But the question arises: effectiveness according to whom? Hooijberg and Choi (2000) discovered that the main roles associated with effective leadership differ according to who is being asked (e.g., focal manager, peers, subordinates, or bosses). For example, when considering a monitoring role, focal managers and their subordinates found this to be an important leadership role whereas peers and superiors did not. As another example, the role of facilitator was seen as a component of effectiveness from the perspective of subordinates and peers but not from the perspective of bosses or the managers themselves. These findings provide potentially important implications to the leadership development process because they reinforce the idea that effectiveness may be in the eye of the beholder (or evaluator). Are we developing leaders to align with what superiors or subordinates find to be most important? Is it possible to develop a leader who can succeed in all roles? Hooijberg and Choi suggested that 360-degree feedback is a good starting place for managers in understanding the differing expectations of various constituency groups.

## 5.2. Self-other agreement as a process of development

A debate emerged in the mid-1990s on the topic of self-other agreement (SOA) in ratings and its role in contributing to leader effectiveness. Atwater and Yammarino's (1992) conclusion that leaders who rated themselves similarly to how others rated them were likely to be more effective leaders was questioned (Fleenor, McCauley, & Brutus, 1996). According to Atwater and Yammarino, so-called over-estimators who rate themselves higher than do others may inaccurately over-estimate their strengths and underestimate their weaknesses, which could adversely affect their leadership effectiveness. Using a categorization scheme that included level of performance (i.e., good versus poor), Fleenor et al. reported that self-other agreement was unrelated to leadership effectiveness. Unfortunately, the categorization approach that was used suffered from methodological shortcomings (e.g., dichotomizing or otherwise truncating continuous data). Using more sophisticated analyses such as polynomial regression,

Atwater, Ostroff, Yammarino, and Fleenor (1998) found relationships between rating agreement and leader effectiveness; however, the relationship was more complex than originally believed.

In a review of the literature on self-other rating agreement, Fleenor et al. (2010) addressed some of these complexities including issues influencing SOA, as well as optimal measurement and analytic techniques for studying this phenomenon. An important conclusion of this review was that whereas self-other agreement was generally related to leader effectiveness, its relationship to various leadership outcomes was not as straightforward. For example, although self-raters who are in agreement with others' ratings are generally most effective, in some contexts over- and under-estimators can be effective. Another conclusion was that self-other agreement can be an important factor in increasing the self-perception accuracy or self-awareness of individuals participating in leadership development programs that use 360-degree feedback or other types of multisource assessments.

Fleenor et al. (2010) also addressed the implications of using sophisticated analytic tools (e.g., polynomial regression) to study self-other agreement. Although psychometrically the most precise of the available techniques for testing hypotheses about SOA, techniques such as polynomial regression are not very useful for providing feedback on self-other agreement to participants in leader development programs. Instead, simpler and more straightforward approaches are recommended. For example, using comparisons of self-ratings to mean ratings across other rater groups (e.g., subordinates or peers) is useful; however, inter-rater agreement should be assessed prior to using mean ratings. An additional suggestion for optimizing the value of 360-degree feedback to leaders was to provide rater training and incentives to raters to guide them in providing quality feedback. Moreover, the anonymity of raters, especially subordinates, is critical in reducing fears of retribution. As mentioned earlier, the role of the rater and his or her definition of effectiveness should also be considered in interpreting 360-degree feedback ratings.

### 5.3. Self-narrative as a process of development

In addition to investigating how the 360-degree feedback and SOA processes can contribute to leadership development, Shamir and Eilam (2005) advanced a self-narrative approach in which leaders' self-stories contribute to their ongoing development. Leaders wrote personal narratives about themselves (i.e., life stories) to help provide insight into the self-relevant meanings they attach to their life experiences. The authors focused on authentic leadership and suggested that by constructing, developing, and revising their life stories, leaders gain self-knowledge, self-concept clarity, and person-role merger, which are necessary elements in their development as authentic leaders. As noted by the authors, "leaders gain authenticity when they act and justify their actions on the basis of the meaning system provided by their life-stories" (p. 396).

Complementing this life-story approach, Sparrowe (2005) offered an explanation of the narrative process through which a leader's authentic self emerges. This perspective is grounded in hermeneutic philosophy (the theory and study of interpretation), proposing that individuals are able to construct their identities from their interpretations of self-narratives created based on their life experiences. An important aspect of these self-narratives is to continuously revise and update them as experiences accrue. Doing so through written journals or other similar techniques can help enhance the effectiveness of programs and interventions that seek to increase self-awareness.

Ligon et al. (2008) also considered the role of hermeneutic philosophy in leadership development. Rather than relying on leaders to interpret their own narratives, these researchers analyzed and coded the developmental events from the early lives of outstanding leaders as chronicled in their biographies. The results supported the proposition that outstanding leaders rely on past experience to assist their sense-making efforts. Although this may seem unsurprising, it suggests that leaders may be engaged in assimilating recent experiences with past experiences in building a coherent personal narrative or life story. Also, patterns of early experiences emerged that distinguished leaders based upon their leadership orientation (socialized or personalized) or style (charismatic, ideological, or pragmatic). For instance, socialized leaders had relatively more experiences that helped to anchor their core values, whereas personalized leadership resulted more from "a life riddled with instability and uncertainty" (p. 329). Ligon et al.'s findings regarding leadership style also suggested that ideological leaders tended to make decisions based on the beliefs and values they formed through early anchoring events, rather than engaging in more proactive fact-finding and analysis activities. Conversely, pragmatic leaders tended to make decisions based on facts and analysis, due in part to "originating" events at the beginning of their careers that helped define their long-term goals and plans for action. Moreover, charismatic leaders were found to have experienced more turning-point or life-redireciting events during their formative years. Finally, and perhaps most interestingly, the study demonstrated that various dimensions of leader performance were related to certain types of experiences. For instance, having had experiences that create optimistic views of others and empathy for their suffering is strongly related to outstanding performance. Consistent with the implications noted by others (e.g., Shamir & Eilam, 2005; Sparrowe, 2005), Ligon and colleagues underscored the importance of the life narrative and its theoretical and practical implications for leadership development research and practice.

## 6. Longitudinal perspectives on leadership development

As noted previously in this review, the nature of leadership development is inherently multilevel and longitudinal (Day, 2011). Thus, it is important for scholars to map and understand intra- and inter-personal change patterns of leaders over time (see Table 3 for a summary and overview). In an attempt to demonstrate the significance of longitudinal research in studying leadership development, Day, Gronn, and Salas (2004) provided a theoretical model outlining how individual leader and follower skills and attributes could contribute to building team leadership capacity. From this model, it was shown how the development

**Table 3**

Longitudinal research in leadership development.

| Topics                 | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Source                                                                                                                                                                                                                                     |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Developmental theories | Transactional and transformational leader development involves episodic skill acquisition combined with adult constructive development. Feedback enables the evolution of individuals' intellectual capacities, values, and beliefs. Team leadership capacity is an outcome of team processes such as teamwork and team learning, which in turn contribute to team member resources such as knowledge, skills, and abilities, helping to shape subsequent performance. Mixed support was found that a leader's order of development influences his or her leadership effectiveness and performance.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Russell and Kuhnert (1992)<br>Day et al. (2004)<br>McCauley et al. (2006)                                                                                                                                                                  |
| Longitudinal studies   | A leader's stage of development is a significant predictor of performance ratings. Future developmental experiences and leadership effectiveness are associated with early learning and leadership experiences, as well as developmental factors including temperament, gender, parenting styles, and attachment styles. True longitudinal studies involve the measurement of the same indicators of leadership at multiple points in time; quasi-longitudinal studies measure predictors early in time and assess their impact on leadership outcomes at a later time. Adolescent extraversion is a significant predictor of adult leader emergence and self-ratings of transformational leadership. Academic intrinsic motivation during childhood and adolescence is a significant predictor of intrinsic motivation to lead during adulthood. Adolescent extraversion, especially when coupled with social skills, is associated with greater leadership potential. Subclinical traits are important moderators of the rate of leader development. While some subclinical traits (i.e., skeptical and imaginative) have a negative relationship with leader development in a military setting others (i.e., cautious, bold, and dutiful) had a positive relationship. Intelligence is a poor predictor of leadership outcomes. Self-esteem is a strong predictor of leadership role occupancy. Enhanced self-esteem mediates the relationship between positive parenting and leadership potential. A strong leader identity acts as a time-varying covariate of leadership effectiveness. An individual's learning goal orientation may also serve as a moderator of developmental trajectories. Evidence from this study suggests two different classes of developmental trajectories. | Strang and Kuhnert (2009)<br>Murphy and Johnson (2011)<br>Day (2011)<br>Reichard et al. (2011)<br>Gottfried et al. (2011)<br>Guerin et al. (2011)<br>Harms et al. (2011)<br>Li et al. (2011)<br>Oliver et al. (2011)<br>Day and Sin (2011) |

of leadership capacity over time can provide for significant leadership resources at subsequent performance episodes. As such, the importance of longitudinal studies was highlighted. This model also was one of the first to attempt to link individual human capital inputs to the development of teamwork, social capital, and shared leadership capacity, among other things. In further elaborating on the longitudinal nature of leader and leadership development, we next focus on conceptual articles related to the longitudinal nature of leadership development as well as the empirical studies described in a special issue of *The Leadership Quarterly* dedicated to longitudinal research.

### 6.1. Developmental theories applied to leader development

In an early conceptual article that considered issues of development over time, Russell and Kuhnert (1992) created a model of leader development based on the integration of three different approaches. Specifically, they combined Kanfer and Ackerman's (1989) episodic model of skill acquisition with Kegan's (1982) approach to adult development based on constructive-developmental theory (McCauley, Drath, Palus, O'Connor, & Baker, 2006), while also incorporating the development of transactional and transformational leadership into the model. Feedback mechanisms were next added to the model to explain changes in leaders' intellectual capacities, values, and beliefs over time. An important contribution of this approach was the crafting of a longitudinal theoretical perspective on leader development through the integration of literatures on skill acquisition, adult development, and leadership.

Russell and Kuhnert's (1992) framework provided a summary of what was known at that time about the processes underlying developmental change related to how leaders understand and act on their environment. With this framework, the authors went beyond the contributions made in individual disciplines (e.g., learning theory, individual differences, performance models) to encompass diverse research from the skill acquisition, human development, and personnel selection literatures. The article provided a framework for future research on how transactional and transformational leaders develop, which led to more systematic investigations of the experiences that contribute to the development of leaders.

McCauley et al. (2006) reviewed the literature on constructive-developmental theory and its relevance for understanding and predicting leader effectiveness. Constructive-developmental theory is a suite of different theories portraying stage theories of adult development. These approaches are mainly concerned with how a person's understanding of self and the world becomes more elaborated and complex over time. There are two main features of development considered from this theoretical perspective. The first concerns so-called *orders of development* (also referred to as levels of psychosocial development), which are organizing principles that guide how individuals gain understanding of themselves and the external world. Successive orders of development build on and



transcend the previous orders such that development is from simpler to more complex and interconnected ways of sense-making. The second feature concerns *developmental movement* involving the change from one order of development to another, usually a higher one, driven by new environmental challenges that demand more complex sense-making abilities.

Constructive-developmental theory has been used sporadically in research in the area of leadership development, usually assuming that a leader's order of development influences his or her leadership effectiveness or managerial performance. Constructive-developmental theory delineates six discrete stages of human development based on the notion that individual differences are a product of how individuals construct or arrange experiences relating to themselves and their social environments (McCauley et al., 2006). One such study examined the psychosocial development of a sample of West Point cadets over a four-year time period. They found evidence of positive constructive development changes in approximately half of the cadets in the sample and that higher levels of development were positively related to various peer, subordinate, and superior measures of cadet performance as leaders in their junior and senior years (Bartone, Snook, Forsythe, Lewis, & Bullis, 2007). Despite the generally supportive findings of the Bartone et al.'s (2007) study, in general the proposition about higher levels of development being associated with better leadership effectiveness has found at best mixed support in the empirical literature. McCauley et al. (2006) called for more research integrating constructive-developmental theory with other relevant streams, moving beyond the focus on developmental order to include dynamics of developmental movement, and examining how the theory might relate to teams and organizations.

In an attempt to answer this call for more integrative research utilizing constructive-developmental theory, Strang and Kuhnert (2009) investigated the application of this theory along with individual personality to examine their effects on leader performance as measured by 360-degree (i.e., multisource) ratings. In a study of 67 management executives who participated in an executive development program, the authors examined constructive-developmental stage (conceptualized as Leadership Developmental Level; LDL) as a predictor of multisource leader performance ratings. They found that LDL was a significant predictor of performance ratings from all rater sources (subordinates, peers, and supervisors). More importantly though, they also tested the incremental predictive ability of LDL compared to the Big Five personality factors. Their results indicated that LDL accounted for unique variance in leader performance beyond that accounted for by personality (when using the leader performance ratings from subordinates and peers); however, they cautioned that this relationship was relatively weak. Nonetheless, constructive-developmental theory provides a unique contribution to our current understanding of leadership and represents a fruitful avenue for future leadership development research.

Taking a different perspective based on childhood antecedents of leader development, Murphy and Johnson (2011) examined the so-called seeds of leader development that germinate and root at various stages before adulthood. They suggested that relevant developmental experiences may occur more readily during sensitive periods of childhood and adolescence, which influence development during adulthood. The authors advanced a framework that considers the influence of early developmental factors on leader identity and self-regulation, which have a relationship to future developmental experiences and leadership effectiveness. In this framework, early developmental factors including genetics, temperament, gender, parenting styles, attachment styles, and early learning and as well as early learning leadership experiences such as those associated with education and sports were important to the leader development process. This framework is immersed in contextual factors such as the individual's developmental stage, societal expectations, and the historical setting. The authors ultimately argued for additional longitudinal examinations of leadership development over the lifespan as a means to help advance current leader development practices.

## 6.2. Longitudinal studies of leadership development

A 2011 special issue of *The Leadership Quarterly* devoted to longitudinal studies of leadership development represented an important milestone in establishing further evidence for leader development processes and the individual difference factors that shape them. The articles in the issue supported the assertion that leaders are products of their life experiences beginning at an early age; however, multiple forces affect leaders' development during their respective life spans. For example, personality characteristics can play an important role in the early development of leaders whereas experience plays a more important role in adulthood. This special issue emphasized the importance of early leader development and the need for more long-term, longitudinal studies of leadership development. Taken together, the research presented in the special issue addressed several key questions related to how leadership develops, including: (a) how do the dispositional characteristics of individuals (e.g., intelligence, temperament, and personality) influence development as leaders, (b) what role do life experiences play in the development of leaders, (c) do early leader development efforts help to develop future leaders in organizations and communities, and (d) what are some individual difference factors that shape the trajectories of leader development?

Three major longitudinal databases were used in several of the articles in this issue. The Fullerton Longitudinal Study (FLS) started in 1979 with 130 one-year-olds and their families. For the first four years, these children were assessed semi-annually and then annually until they reached the age of 17. Data collection in this program is ongoing. Longitudinal data from United States Military Academy at West Point was collected that focused on the leader development of military cadets over the course of their time at the Academy. The U.S. Department of Labor's National Longitudinal Survey of Youth 1979 (NLSY79) tracked young people born between 1957 and 1964, and first interviewed in 1979.

Three of the special issue articles focused on the effects of personality on leadership development. Using the Fullerton database, Reichard et al. (2011) investigated how the five-factor model of personality (neuroticism, extraversion, openness, conscientiousness, and agreeableness) and intelligence were related to leader emergence and transformational leadership. They found that personality traits predicted leader emergence in early adults. Of the five personality factors, extraversion was the best predictor of leader emergence and



self-ratings of transformational leadership. Surprisingly, intelligence was only related to non-work leader emergence. The authors stressed the need for exposure to leadership opportunities for both extraverted and introverted youth to help them develop more fully as leaders in adulthood.

Continuing with the Fullerton data, [Gottfried et al. \(2011\)](#) looked at academic intrinsic motivation (motivation for and enjoyment of school learning without external rewards) during childhood and adolescence as a predictor of three aspects of motivation to lead during adulthood. The three aspects of motivation to lead included two intrinsic motives (affective identity motivation and non-calculative motivation) and one extrinsic motivation (social normative motivation). *Affective identity motivation* to lead concerns the enjoyment of leading, *non-calculative motivation* concerns leading for its own sake and not for the purpose of receiving external advantages, and *social normative motivation* concerns leading to fulfill one's duty. The first two of these motives to lead are intrinsic in nature, whereas the third is guided by external forces. The study revealed that academic intrinsic motivation was highly related to the affective identity and non-calculative components of motivation to lead, supporting the authors' contention that intrinsic motivation is a state that exhibits continuity over the lifetime. Children and adolescents who exhibit academic intrinsic motivation are more likely to become adults who are intrinsically motivated to become leaders. Accordingly, academic intrinsic motivation was unrelated to social normative motivation. In a recurring theme, leader intelligence was of no consequence in predicting motivation to lead.

In a related article, [Guerin et al. \(2011\)](#) focused on the roles of extraversion and intelligence in predicting leadership outcomes. This study explored the early antecedents of extraversion by investigating behavior and temperament in childhood. Extraverted adolescents – especially those who possessed good social skills – showed greater leadership potential, whereas intelligence did not appear to be predictive of leadership potential.

Also using data from FLS, [Oliver and associates \(2011\)](#) examined the role of supportive parenting in adolescence and transformational leadership in young adults. They found that the relationship between positive parenting and leadership potential was mediated by enhanced self-esteem. Quality parenting and self-esteem were measured during adolescence and self-reported transformational leadership was assessed at age 29 while controlling for the effects of socioeconomic status. This study represented one of the first attempts to investigate these relationships across time. Results supported the hypothesis that a stimulating and supportive environment provided by an adolescent's family created a more positive self-concept, which in turn positively influenced the subsequent emergence of transformational leader qualities. Thus, the content of familial support during adolescence was related to self-rated leadership outcomes as an adult.

Taking a different approach to examining personality in leadership development research, [Harms, Spain, and Hannah's \(2011\)](#) study went beyond typical personality assessments (e.g., Big Five) in exploring the role of subclinical personality traits on leadership development over time. The authors argued that there is a need for empirical research using large samples of developing leaders over time to examine the potential influence of personality traits in general, and what they see as character flaws in particular, and their respective influences on leader development. Specifically, Harms et al. were interested in idiosyncratic (i.e., subclinical) traits that do not greatly inhibit daily functioning (as would clinical traits or those used to diagnose psychological pathologies) yet have the potential to lead to negative consequences in certain contexts. Examples include subclinical traits of excitable, skeptical, leisurely (e.g., indifferent to requests of others), colorful (e.g., expressive, dramatic, wants to be noticed), and imaginative (e.g., acting or thinking in unusual ways).

Using the West Point database, [Harms et al. \(2011\)](#) studied a leader development program that had demonstrated an overall positive effect on participants over a span of three years. The authors found subclinical traits to be important moderators of the rate of leader development (i.e., developmental trajectories) during the program, accounting for 11–17% of the variance in the changes in leader development. Whereas the authors found that some of the subclinical traits (i.e., skeptical and imaginative) had negative relationships with leader development, they also found that others (i.e., cautious, bold, colorful, and dutiful) had positive relationships. This provides somewhat of a mixed message with regard to subclinical traits, indicating that they may not always have negative influences on leader development. (It should be noted that these relationships were found in a student military sample where traits such as imaginative may not be highly regarded while dutiful would be.) The results of this study also demonstrated that leader development persists over numerous years and that the effects of personality on this process endure over time. From these results, Harms and colleagues proposed that leader development is a dynamic process in which personality factors moderate developmental processes through enhancing or inhibiting personal change over time. They suggested that with additional research, leadership interventions and executive training programs might be tailored to the specific needs or characteristics of the leader.

Consistent with the individual difference focus of other articles in this issue, [Li, Arvey, and Song \(2011\)](#) investigated the effect of general mental ability, self-esteem, and familial socioeconomic status on leadership role occupancy (whether an individual occupies a leadership role) and leader advancement (an increase in supervisory scope assessed by the number of assigned subordinates). Additionally, gender was examined as a moderating variable. Using the NLSY79 database, Li et al. found that developmental outcomes were not strongly related to general mental ability (a consistent theme across several studies in the special issue). Specifically, they found self-esteem to be strongly predictive of leadership role occupancy across both genders as well as predictive of the rate of leadership advancement for females. An unusual and unexpected finding was that familial socioeconomic status was negatively related to leader advancement for women. It is unclear why this would be the case (i.e., women from higher socioeconomic families having lower levels of development) and replication of this finding is needed before any strong conclusions can be drawn.

[Day and Sin \(2011\)](#) offered yet another perspective on leader development, focusing on developmental trajectories of emerging leaders over a 13-week time span. Within this paradigm, individuals were hypothesized to vary in terms of initial leadership effectiveness levels and follow different developmental trajectories based on different situational and experiential

demands, as well as their willingness and ability to learn. The authors found support for the contention that because of its hypothesized impact on individual thinking and behavior assuming a strong leader identity would function as a within-person, time-varying covariate of leadership effectiveness. This echoes the focus on self-identity proposed by authors such as [Lord and Hall \(2005\)](#). Results partially supported an additional hypothesis that an individual's learning goal orientation (an orientation that focuses on one's development rather than demonstrations of competence) would serve as a between-person, cross-level moderator of developmental trajectories, suggesting that how individuals construct and manage goals can affect their development as leaders.

In an integrative review of the articles addressed in this special issue, [Day \(2011\)](#) discussed the difference between true longitudinal investigations of leadership development and what he termed to be quasi-longitudinal studies (following the distinction made between experimental and quasi-experimental designs). True longitudinal studies involve the measurement of the same indicators of leadership at a minimum of three points in time, whereas quasi-longitudinal studies measure predictors early in time and assess their impact on leadership outcomes at a later time. As noted by Day, both methods have value because they each take a long-lens approach to understanding leadership development and the process of developing leaders over time. Guest Editors [Riggio and Mumford \(2011\)](#) concluded by stating their wishes that this special issue would: (a) encourage more longitudinal research on leader development; (b) draw attention to existing longitudinal databases that are useful for studying the lifelong development of leadership; and (c) encourage more evaluation of leadership development efforts through the use of true longitudinal designs.

## 7. Evaluation methods in leadership development

A significant obstacle to advancing scholarly interest in leader and leadership development over the years can be traced to methodological and analytical issues. In the 1970s, prominent psychologists and psychometricians (e.g., [Cronbach & Furby, 1970](#)) questioned whether we could, or even should, attempt to measure change. Since that time the field has advanced rapidly in understanding ways to measure and model change appropriately. We now know much more about longitudinal methods as well as multilevel modeling than we did even a decade ago. And given the multilevel and longitudinal nature of leadership development ([Day, 2011](#)), these are critically important contributions further motivating the advancement of scholarly interest in the topic (see [Table 4](#) for a summary).

But it is also important to bring rigorous evaluation methods to understanding content, process, and outcome issues in development. As such, the *evaluation* of developmental interventions is another area that has received theoretical and empirical attention in this journal. In evaluating the effects of leadership development interventions, it should be noted that focusing on job performance and performance change over time is not the most appropriate approach to understanding the development of leaders or leadership. Job performance is affected by many things other than leadership skills. In other words, it is a contaminated as well as deficient criterion if the focus is purportedly on leadership development. Changes in job performance may also have different time lags associated with change compared to those for development. Thus, the appropriate criterion for evaluation efforts is development and its markers rather than performance per se. The field needs to focus on identifying and tracking appropriate markers or proxies of development that go beyond a fixation on rated job performance.

A special issue of *The Leadership Quarterly*, on the evaluation of leadership development interventions was co-edited by [Hannum and Craig \(2010\)](#). Because of the conceptual and measurement challenges inherent in this type of research, evaluating leadership development is often a complex undertaking. Evaluations of leadership development efforts are made more difficult by the contexts in which they occur. For example, participants in leader development programs may represent different organizations, different functional positions, and position levels, which create difficulties in identifying appropriate control groups and conducting rigorous evaluation studies. Additionally, there may be long time periods between interventions and outcome measurements.

Although evaluation methods exist that can meet these challenges, few published studies have focused on the application of these techniques in estimating the behavioral, psychological, or financial effects associated with leadership development initiatives. The

**Table 4**  
Evaluation methods in leadership development.

| Topics                                      | Summary                                                                                                                                                                                                                                     | Source                                      |
|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| Social network analysis                     | Social Network Analysis (SNA) can identify the structure of relationships among people, goals, interests, and other entities within an organization.                                                                                        | <a href="#">Hoppe and Reinelt (2010)</a>    |
| Q-methodology                               | Q-methodology can be an effective method for soliciting participants' perceptions of outcomes. This method can reduce the individual viewpoints of the participants down to a few factors depicting shared ways of thinking about outcomes. | <a href="#">Militello and Benham (2010)</a> |
| Formative and summative evaluation          | Mixed methods including both summative evaluation and formative evaluation can be used to evaluate leader self-development.                                                                                                                 | <a href="#">Orvis and Ratwani (2010)</a>    |
| Hierarchical linear modeling                | Hierarchical linear modeling (HLM) can be used to assess multilevel change over time in a leadership development context.                                                                                                                   | <a href="#">Gentry and Martineau (2010)</a> |
| Return on leadership development investment | A method for estimating the return on leadership development investment (RODI) was proposed, along with implications for measuring organizational effectiveness.                                                                            | <a href="#">Avolio et al. (2010)</a>        |

aim of this special issue was to present research that demonstrated such methods. Described below are a number of articles from this issue that were particularly innovative.

Three articles offered specific techniques for evaluating leadership development interventions. Following Day's (2000) thinking about the role of social capital in leadership effectiveness, Hoppe and Reinelt (2010) described how Social Network Analysis (SNA) can identify the structure of relationships among people, goals, interests, and other entities within an organization. SNA, for example, can be used to determine if a leadership development intervention resulted in changes in connectivity in an organization. Additionally, the authors presented a typology for classifying different kinds of leadership networks, along with outcomes typically associated with each type of network.

The use of Q-methodology as a data collection tool for evaluating an initiative to develop collective leadership was described by Militello and Benham (2010). According to the authors, Q-methodology can be an effective method for soliciting participants' perceptions of outcomes. One purpose of this method is to reduce the individual viewpoints of the participants down to a few factors depicting shared ways of thinking about outcomes. It began with the development of a set of statements (the Q-sample) that would be sorted into categories by the participants. To develop the Q-sample, researchers reviewed documents detailing the mission and goals of the initiative being evaluated. They selected statements that were outcome oriented and descriptive of the initiative, which resulted in a Q-sample consisting of 33 statements. Participants then sorted these statements into outcome categories for the purpose of evaluating leader development. This methodology provided a valuable leadership development tool for participants and an evaluation tool for researchers.

Relatedly, Orvis and Ratwani (2010) highlighted the application and integration of formative and summative evaluation approaches for leader self-development. Because of the highly individualized nature of self-development, evaluators often face unique challenges when evaluating these initiatives. They recommended using a mixed-methods approach that applies effectiveness attribute taxonomy for a self-development activity. The authors demonstrated a methodology for applying this taxonomy to evaluate the effectiveness of self-development activities and discussed the practical implications of adopting the taxonomy for evaluation purposes.

Two articles in this issue described statistically based approaches to leadership development evaluation. Gentry and Martineau (2010) presented an application of hierarchical linear modeling (HLM) for assessing multilevel change over time in a leadership development context. One of the difficulties in evaluating leadership development is measuring whether and how participants change during the initiative. Even when change is an integral part of the design and evaluation of the initiative, uncontrolled events (e.g., missing data) may affect the ability of the evaluators to accurately measure change over time. Using data from a longitudinal school team leadership development initiative, the researchers used HLM procedures to examine changes that occurred across participating teams. The results demonstrated how to detect whether teams were significantly different on an initial assessment and predicted progress using an intercept-as-outcomes analysis. It also demonstrated how to detect whether growth rates were different across teams and how these changes could be predicted using a slopes-as-outcomes analysis. An advantage of this type of evaluation approach is that it allows researchers to examine and test whether successful teams improved at faster rates than other teams, rather than merely performing better at the start of the initiative.

In another statistical approach to evaluation, a method for estimating the return on leadership development investment (RODI) was proposed (Avolio, Avey, & Quisenberry, 2010), along with its implications for measuring organizational effectiveness. The authors suggested that the decision-making process involved in deciding to invest in leadership development should be similar to the decision-making process used by organizations whenever there is a decision to incur costs for an anticipated future benefit. The authors described how to estimate the return on leadership development using different assumptions, scenarios, length of the intervention, and level of participants engaged in the development program. They found that the expected return on investment from leadership development interventions ranged from a low negative RODI to over 200% depending on a number of factors.

Taken together, the articles published in this special issue on the evaluation of leadership development initiatives provided state-of-the-science perspectives on the design, analysis, and interpretation of evaluation research. It is invariably stated that any leadership development initiative must include an evaluation component. Unfortunately, this admonition is often ignored in practice. This special issue provided a "way forward" for helping researchers and practitioners involved with leadership development by providing sound advice to more fully integrate evaluation in their interventions and why doing so is critical.

## 8. Summary and future directions

The purpose of this review was to identify scholarly advances and contributions to the field of leadership development published mainly in *The Leadership Quarterly* over its 25-year history. We reviewed both conceptual and empirical articles that collectively examined definitional, content, process, longitudinal, and evaluation issues concerning leader and leadership development. In terms of operationalizing leadership development, Day (2000) posits that leadership is a complex interaction between people and environments that emerges through social systems. He recommends that scholars and practitioners approach leadership development as a process that transcends but does not replace individual leader development. Building upon earlier reviews of the field, the present review provides an in-depth look at how the leadership development field (including that of leader development) has evolved.

The major insights from the review can be summarized as follows: through the examination of an array of factors including experience, skills, personality, self-development, social mechanisms, 360-degree feedback, self-other agreement, and self-narratives, leadership development represents a dynamic process involving multiple interactions that persist over time. The leadership development process tends to start at a young age and is partly influenced by parental modeling. It involves the development and application of a variety of skills (e.g., wisdom, intelligence, and creativity; Sternberg, 2008) and is shaped by factors such as

personality and relationships with others. The overall developmental process can be informed by different theories, such as constructive-developmental theory (McCauley et al., 2006) and authentic leadership (Gardner et al., 2005), and can be measured in a variety of ways including multisource ratings. Wherever possible, developmental practices should be carefully tailored to current developmental needs of the leader.

Leadership is something that all organizations care about. But what most interests them is not which leadership theory or model is “right” (which may never be settled definitively), but how to develop leaders and leadership as effectively and efficiently as possible. As such, this is an important area of scholarly research and application with myriad unanswered (and even undiscovered) questions to pursue. We next outline some promising avenues for future research.

### 8.1. *Process-oriented research*

Because leadership development is a field that is inherently longitudinal in nature, researchers need to focus on conceptualizing process theories related to the development of leaders and leadership over time and testing these models using relevant methodologies. Leadership as a field has perhaps been preoccupied with proposing and testing static models, even those that hypothesize mediation (i.e., causal) effects. Simply put, cross-sectional methods are incomplete and probably inappropriate for testing hypotheses and research questions related to leadership development. This puts a burden on researchers given the difficulties associated with conducting longitudinal research. But if leadership is a process and not a position, and leadership development is a longitudinal process involving possibly the entire lifespan, then we need to put forward comprehensive process models and test them appropriately.

### 8.2. *Choosing relevant outcome variables*

Researchers need to give serious thought to what is hypothesized to develop as a function of leader or leadership development in a given context. This may involve human capital kinds of variables related to individual knowledge, skills, and abilities, or it maybe things that are even more difficult to assess such as the psychosocial stage of adult development (i.e., orders of development) as proposed in constructive-developmental theory (McCauley et al., 2006). Adopting good outcomes (in place of job performance) to study models of leader and leadership development is also important. Of course, there should be a link between development and performance in a job or role but that is likely neither immediate nor straightforward. Related to the use of job performance, another outcome of questionable relevance to studies of leader development is the organizational position or role one holds (i.e., leadership role occupancy). As noted, leadership is conceptualized as a process rather than a position, so using position as an outcome in leader development research has limited meaning (Day, 2011). Although it may be convenient to use such outcomes, it is unclear how to compare positions across different organizations or sectors (e.g., corporate, military, government, or nonprofit). Researchers should always clarify what it is they think will develop over the period that they plan to study leader development processes. In this way, linking process models with relevant outcomes is a pressing research need.

### 8.3. *Focus on personal trajectories of development*

It has been noted that “one central challenge facing scientific psychology is the development of comprehensive accounts of why humans progress along different life trajectories” (Smith, 2009, p. 419). A related challenge in the leader development field is crafting comprehensive accounts of why individuals progress along different developmental trajectories as leaders. The good news is that we now have the methods and analytical techniques to appropriately chart and understand these kinds of developmental trajectories. However, we need more in the way of theories and process models to guide our research. Examining different trajectories of development is a related and important concern. There is likely little argument that people start at different places in their developmental journeys as leaders and develop at different rates and in different ways over time. For these reasons, we need to more fully examine individual differences in developmental trajectories and whether a typology of trajectories can be devised to help us understand and more accurately predict how people change over time. In practical terms this would provide guidance for enabling us to better learn from those who develop more quickly and effectively and to apply the knowledge to help those who struggle to develop as leaders. Admittedly, this is not easy research to conduct because it requires large samples, a longitudinal focus, and appropriate measurement intervals. Despite these challenges, research on charting and understanding developmental trajectories is an area that deserves future research attention.

### 8.4. *Broadening the Developmental Focus*

Researchers have tended to examine how individual leaders develop over time. We need to give greater attention to more collective aspects of leadership, whether they are dyadic leader and follower development or even more collective forms such as shared leadership. We know that development tends to occur in an interpersonal context, so incorporating that context into our research designs, methods, and analyses seems like a logical step in advancing the field of leadership development. For that reason, something like social network analysis (e.g., Hoppe & Reinelt, 2010) may be especially appropriate to consider in future studies of leadership development. There is an emerging interest in what some have called network churn or changes in network structure and individual positions within networks over time (e.g., Sasovova, Mehra, Borgatti, & Schippers, 2010). This seems like a logical stream of research to consider in broadening the focus of leadership development. But as we broaden this focus to include collectives, it should be noted that the line between these forms of leadership development and what has historically

been considered organization development (OD) becomes blurred. Nonetheless, that should not stop researchers from taking steps to broaden the focus on development and in doing so perhaps will also advance the field of OD.

### 8.5. Practicing Leadership

We know from the extensive literature on expertise and expert performance that it generally takes 10 years or 10,000 h of dedicated practice to become an expert in a given field (Ericsson & Charness, 1994). For this reason, it is highly unlikely that anyone would be able to develop fully as a leader merely through participation in a series of programs, workshops, or seminars. The actual development takes place in the so-called white space between such leader development events. However, we lack a clear idea of the ongoing ways in which people practice to become more expert leaders. Such practice may not be intentional or mindful, which may make it more difficult to study. But this notion of ongoing practice through day-to-day leadership activities is where the crux of development really resides. Rather than focusing on implementing better instructional design or putting together what we hope are more impactful developmental interventions, it might be more productive to take a step back and focus on what happens in the everyday lives of leaders as they practice and develop.

### 8.6. Self-awareness and 360-degree feedback

Another area for future research is related to the use of 360-degree feedback instruments as measures of self-awareness. It is often assumed that individuals with ratings that mirror those provided by their followers (high self-other agreement) are more self-aware. Indeed, self-other agreement is often used as a proxy for self-awareness in leadership research. For instance, Fleenor et al. (2010) suggested that low rating agreement is an indication of low self-awareness, especially for over-estimators. In much of the research in this area, however, self-awareness is measured with the same instrument used to determine rating agreement (i.e., the instrument also contains a scale that measures self-awareness). In order to test the relationship between self-awareness and leader effectiveness, there is a need to develop valid and independent measures of self-awareness. With better measures, it may be possible to more thoroughly investigate the relationships among self-awareness, rating agreement, and effectiveness for leader development purposes.

## 9. Limitations

Although we have attempted to provide a comprehensive review of the scholarly literature on leader and leadership development published over the previous 25 years in this journal, there are areas with potential developmental implications that we have chosen not to review. The predominant reason for this decision is that the focal literature is not sufficiently developed or the implications for leadership development are unclear. Alternatively, it might be argued that there are potential developmental implications associated with just about every published leadership article. That is not very helpful in attempting to summarize and synthesize the most highly relevant literature.

In making choices about what to review, we did not address areas such as the genetic bases of leadership (De Neve, Mikhaylov, Dawes, Christakis, & Fowler, 2013), in which leadership role occupancy was used as the criterion (see criticisms of this outcome discussed previously) and for which it is difficult to argue that leadership can be developed if it is genetically determined; cross-cultural leadership (Sadri, Weber, & Gentry, 2011), whereby there are differing perspectives on what are the most important behaviors or competencies that should be developed; political perspectives on leadership (Ammeter, Douglas, Hochwarter, Ferris, & Gardner, 2004) that take a somewhat unique position in terms of how effective leader behavior is defined; and a recent special issue on leader integrity (Simons, Palanski, & Trevino, 2013), of which we have little empirical evidence as to how it might be developed. Although there are emerging literatures in these areas, as noted, we have confined this review to research that pertains most directly to the development of leaders and leadership.

## 10. Conclusion

As noted by the eminent leadership scholar John Gardner (1990), “In the mid-21st century, people will look back on our present [leadership development] practices as primitive” (p. xix). This statement is consistent with our contention that despite the significant advances in understanding leadership development made over the past 25 years, many of which have been published in the pages of *The Leadership Quarterly*, the field is still relatively immature. This also means the field is replete with opportunities for researchers and theorists. Looking ahead to the ensuing 25 years, it seems certain that if scholars answer the call, the field will continue to progress to a less primitive state. This will stimulate better leadership and, consequently, foster better organizations, communities, and societies.

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## **Majoring in Leadership: A Review of Undergraduate Leadership Degree Programs**

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### **Abstract**

The purpose of this qualitative study was to compare and contrast the leadership major in identified programs from universities in the United States. This was done in an attempt to develop a foundation for the leadership discipline. Utilizing interviews, surveys, websites, and evaluation of school materials as data sources, an initial list of 70 schools was narrowed to 15 upon examination of their academic curricula. A thorough evaluation of these 15 leadership degree programs was then conducted. Noticeable differences included varied school sizes, host departments, and credit hour requirements. Other inconsistencies included the focus of the program, the major scholars evident within the curricula,

and the disparity between theory versus skill development. Recommendations include further study of other leadership programs across the nation, examination of leadership graduates in the workforce, and collaboration among leadership programs nationwide.

## **Introduction**

It is well documented that over the last two decades there has been an explosion in the growth of student leadership programs on college campuses in the United States (Schwartz, Axtman, & Freeman, 1998). Now reaching nearly 1000 in number, these programs can be found in all areas of the academy. Some are co-curricular in nature and housed in student affairs and residential life programs while others are found in various academic departments. According to a recent study by Riggio, Ciulla, and Sorenson (2003), part of this growth can be found in academic courses, certificates, and concentrations. What is most interesting, however, is that a few selected colleges and universities have even developed full undergraduate degree programs in leadership.

This research is the first attempt to learn more about these unique schools and degree programs. It is our hope that this study can and will provide valuable information for leadership scholars, educators, and others who wish to explore the "leadership major." While this initial leadership degree analysis is limited in scope, the research team believes that the data does provide useful information for the field of leadership education.

## **Purpose and Research Themes**

In most established academic disciplines, from art history to business management to sociology, for example, there are some agreed upon building blocks and standards by which nearly all universities and scholars adhere (Mangan, 2002). We ask the question "Is this true with the relatively new majors in leadership?" Do the program architects, curriculum developers, and the faculty of these leadership degree programs share common philosophies and approaches to leadership studies? The purpose of this study is to determine if there is a common framework or foundation to this new emerging discipline. And if so, what is it? For the most part a typical political science student would be exposed to roughly the same subject matter whether they attend university X or university Y. Would that also be the case for leadership studies? Have these educators agreed on the basic elements of an undergraduate leadership major?

The purpose of this study is to carefully evaluate the 15 colleges and universities identified as having leadership degree programs for their commonality or lack of them. This study looks for consistency and patterns of uniformity among program elements. It seeks to identify both the similarities, as well as the differences between the various programs. To accomplish this, the data is divided into four categories or research themes:

1. School Profile – university type, enrollment, host school/college.
2. Program Profile – major name, degree type, requirements, description.
3. Mission and Purpose – central theme, learning objectives, theory and application.
4. Curriculum – course type, sequence, pedagogy.

The first area evaluated was the school profile. This included the college or university type (public or private), size of the institution (undergraduate enrollment), and the host school and college of the major. This information provided general insight into the schools offering degrees in leadership. The second research theme examined was the program profile data. Here the research team reviewed more of the technical aspects of the leadership degree program. This included the name of the major, host department, student enrollments, degree type, description, and course delivery options. This material provided a much more detailed picture of the leadership degree program itself. Third, the study examined the mission and purpose of the 15 leadership degree programs. This research theme evaluated the schools in the study by analyzing their theoretical foundation and learning objectives. This included the central program theme and philosophy, scholar impact, learning objectives and theory and application orientation. This information provided a more in-depth look at the overall philosophy and purpose behind the curriculum. Finally, the research team examined the major elements of the leadership curriculum. Here the research team sought to gain a better understanding of how the schools went about accomplishing their mission and purpose. The curriculum profile included the course types, the sequence of courses and course pedagogy. This data allowed us to make critical judgments on specifics of the various programs.

It is our hope that this study can begin the process, or at least a discussion, on these important program and curriculum development issues. We believe that this discussion is paramount to the future success of leadership as an academic discipline.

## **Methodology**

The method of inquiry in this research was primarily qualitative in nature. Multiple data sources were used which included interviews, surveys, internet searches, and evaluation of school materials. Although several different techniques were used to gather information, the assessment survey instrument remained consistent throughout the study. This instrument was designed by the research team to collect data in a manner which minimized bias and maintained consistency. The survey questions were grouped by the research themes to reflect the purpose of the research (Krathwohl, 2004).

## Data Collection and Analysis

The research team collected the research data from the spring of 2004 through the fall of 2005. First, the research team began the process with the identification and evaluation of schools that publicize their offering of an undergraduate major in leadership. Through an exhaustive web-based search, conversations with leadership educators at professional conferences, and the resource book *Leadership Education: A Source Book of Courses and Programs* (Schwartz, Axtman, & Freeman, 1998), the search initially returned a list of over 70 schools who offer a leadership major.

In this stage of the research, three types of majors were identified (a) majors with the word “leadership” in the title, i.e., “organizational leadership” (b) majors without the word “leadership”, i.e., “agricultural development” and (c) majors offered abroad. The research team chose to focus on the majors with the word “leadership” in the title for the purpose of this study. This narrowed the list of degree programs to 40.

The research team carefully compared curriculum requirements for each of the 40 degree programs. While many schools titled their major as leadership or organizational leadership, it was apparent that these schools were in fact renaming traditional business administration and management programs. If the major included only one, or in many cases, zero leadership based courses, they were also eliminated from the study. After a closer examination of the 40 degree programs using the title(s) of the major that included “leadership,” as well as thorough evaluation of the curriculum, the research team narrowed this list of schools to 15 (see Table 1). However, there could be undergraduate leadership degree programs that were left out due to study limitations.

**Table 1. Colleges and Universities**

|                            |                                 |
|----------------------------|---------------------------------|
| Bellevue University        | Our Lady of the Lake University |
| Benedictine University     | Peace College                   |
| Carroll College            | Penn State University           |
| Chapman University         | Purdue University               |
| Dominican University       | Rockhurst University            |
| Fort Hays State University | University of Richmond          |
| Franklin University        | Wright State University         |
| Marietta College           |                                 |

After narrowing the list, the research team then began collecting program material from the participating schools. In addition to the assessment survey discussed above, the researchers closely examined program materials using the research theme categories. Follow-up email conversations and phone interviews were used to clarify and confirm accuracy of the data. Once collected, data was grouped according to the established research themes. This information was then used in

the creation of a corresponding matrix to effectively display the data for analysis (see Tables 2-7).

Throughout this study, the research team participated in four different levels of analysis when making judgments about the data. Level one analysis consisted of summarizing the information provided by each school independent of other data in the matrix and forming conclusions accordingly. Level two analysis compared and analyzed information horizontally across the matrix within one particular school and produced conclusions based on all available information regarding that school. Level three analysis compared the schools on specific issues (course type, enrollment, etc.) through vertical analysis of the 15 different schools in the matrix. Finally, level four analysis grouped both the horizontal and vertical analysis data together to draw overall conclusions (Creswell, 1998).

## Findings

### School Profile

Table 2.  
School Profile Matrix

| <b>College/University</b>  | <b>State</b> | <b>Type of University</b> | <b>Undergrad Enrollment</b> | <b>Host College of the Major</b>           |
|----------------------------|--------------|---------------------------|-----------------------------|--------------------------------------------|
| Bellevue Univ.             | Nebraska     | Public                    | 5,524                       | Arts & Sciences                            |
| Benedictine Univ.          | Illinois     | Private                   | 2,000                       | Arts & Sciences                            |
| Carroll College            | Wisconsin    | Private                   | 2,100                       | Professional Studies                       |
| Chapman Univ.              | California   | Private                   | 4,500                       | Professional Studies                       |
| Dominican Univ.            | Illinois     | Private                   | 2,700                       | Adult Learning                             |
| Fort Hays State Univ.      | Kansas       | Public                    | 9,000                       | College of Business & Leadership           |
| Franklin Univ.             | Ohio         | Private                   | 9,600                       | School of Management & Leadership          |
| Marietta College           | Ohio         | Private                   | 1,300                       | McDonough Center for Leadership & Business |
| Our Lady of the Lake Univ. | Texas        | Private                   | 3,000                       |                                            |
| Peace College              | N. Carolina  | Private                   | 700                         |                                            |
| Penn State Univ.           | Pennsylvania | Public                    | 40,000                      | Liberal Arts                               |
| Purdue Univ.               | Indiana      | Public                    | 69,847 (All Campuses)       | Technology                                 |



|                    |          |         |        |                             |
|--------------------|----------|---------|--------|-----------------------------|
| Rockhurst Univ.    | Missouri | Private | 2,500  | Professional Studies        |
| Univ. of Richmond  | Virginia | Private | 2,976  | Jepson School of Leadership |
| Wright State Univ. | Ohio     | Public  | 15,000 | Education & Human Services  |

The findings presented are summaries of the data gathered through the collection procedures. Utilizing the four levels of analyses, the research team assessed, evaluated, and made judgments about the data. Categorized by the research themes, 22 different findings were identified.

1. While most leadership degree programs are found at small private schools, our research tells us that these leadership programs are not limited to a particular type or size of institution (large division one research universities – Purdue and Penn State; small regional public institutions – Bellevue, Fort Hays State, Wright State; and small private schools – Benedictine, Carroll, Chapman, Dominican, Franklin, Marietta, Our Lady of the Lake, Peace, Rockhurst, and Richmond).
2. Most degree programs are located in professional and adult studies programs (Carroll, Chapman, Dominican, and Rockhurst), followed by colleges of arts (Penn State, Bellevue, and Benedictine), and colleges of business and leadership (Fort Hays State, Franklin, and Marietta).

### **Leadership Program Profile**

3. The majority of the schools name their major Organizational Leadership (10). Other names used include Leadership (Bellevue), International Leadership Studies (Marietta), Leadership Studies (Peace and Richmond), and Non-Profit Leadership Studies (Rockhurst).
4. Data showed there was very little consistency in which academic department housed the leadership major. For example, Benedictine's program is in the psychology and sociology department, while at Wright State, the department of education and human services hosts the leadership degree.
5. The credit hour requirements range greatly between the various degree programs (30 credit hours to 71 credit hours).
6. All programs in the study were created between 1993 and 2003. As noted earlier, the leadership major is new to the landscape of the academy.
7. Careers of graduating students from these programs varied greatly. The data showed occupations in government, social service, religion, business, and industry.

Table 3  
Program Profile Matrix

| University            | # of FTE Faculty | Name of Major   | Host Department              | Type of Degree      | Credit & Additional Requirements                                          | Delivery Options                                 | # of Majors/ Year Started | Typical Students & Career Options     | Major Description                                                                                     |
|-----------------------|------------------|-----------------|------------------------------|---------------------|---------------------------------------------------------------------------|--------------------------------------------------|---------------------------|---------------------------------------|-------------------------------------------------------------------------------------------------------|
| Bellevue Univ.        | 5-Part Time      | Leadership      |                              | Bachelor of Arts    | 36 + Electives<br>Must have Associates Degree and 3 years work experience | Both, however primarily degree completion cohort | 50/1995                   | Non-Trad Distance                     | To give students the theoretical & practical preparation they need to assume positions of leadership. |
| Benedictine Univ.     | 1                | Org. Leadership | Psychology & Sociology       | Bachelor of Arts    | 39 Open                                                                   | Adult Learners- Nights & Weekend                 |                           | Adult                                 | Designed for adults interested in the behavioral perspectives of organizations.                       |
| Carroll College       | 1                | Org. Leadership | Business Admin. & Economics  | Bachelor of Science | 64 Open                                                                   |                                                  | 10/2001                   | Traditional On-Campus Student         | Program incorporates courses in leadership, business, administration, & politics.                     |
| Chapman Univ.         | 7                | Org. Leadership | Leadership & Management      | Bachelor of Arts    | 54 Credits Open Admission                                                 | Both                                             | 560/1995                  | Non-Trad distance completion students | Program provides education for & about leadership... emphasizing life & work.                         |
| Dominican Univ.       | 2-Part Time      | Org. Leadership | Institute for Adult Learning | Bachelor of Science | 42 + Electives Open                                                       |                                                  |                           | Adult Learner                         | Program designed for leaders who wish to synthesize leading edge concepts with practical experiences. |
| Fort Hays State Univ. | 5 + Part Time    | Org. Leadership | Leadership Studies           | Bachelor of Arts    | 33 + Cognates                                                             | Both                                             | 235/2000                  | Both trad. On Campus &                | Focuses on the study of                                                                               |

|                                  |                            |                                        |                                                     |                           |                                                                        |           |          |                                                                                                 |                                                                                                                                            |
|----------------------------------|----------------------------|----------------------------------------|-----------------------------------------------------|---------------------------|------------------------------------------------------------------------|-----------|----------|-------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
|                                  |                            |                                        |                                                     | or<br>Science             |                                                                        |           |          | Adult<br>Distance                                                                               | leadership in the<br>context of the<br>modern<br>organization.                                                                             |
| Franklin<br>Univ.                | 5                          | Org.<br>Leadership                     | School of<br>Management &<br>Leadership             | Bachelor<br>of<br>Science | 36                                                                     | Both      | 80/1995  | Trad On<br>Campus                                                                               | Turning business<br>managers into<br>leaders.                                                                                              |
| Marietta<br>College              | 1 + 11<br>Adjunct          | International<br>Leadership<br>Studies | McDonough<br>Center for<br>Business &<br>Leadership | Bachelor<br>of Arts       |                                                                        | On Campus | 2001     | Trad On<br>Campus                                                                               | The ILS Major<br>offers students an<br>opportunity to<br>study global<br>leadership issues<br>from an<br>interdisciplinary<br>perspective. |
| Our Lady of<br>the Lake<br>Univ. | 6                          | Org.<br>Leadership                     | Leadership<br>Studies &<br>Human Sciences           | Bachelor<br>of<br>Science | 71<br>Open                                                             | Both      | 90/2002  | Industry,<br>Government,<br>Social Service<br>background                                        | Preparing<br>individuals to<br>serve as catalysts<br>for community<br>development &<br>improvement.                                        |
| Peace<br>College                 | 2                          | Leadership<br>Studies                  | Org. Studies                                        | Bachelor<br>of Arts       | 30/Open Co-Major<br>Requirement                                        | On Campus | 45/2001  | Traditional on<br>campus                                                                        | Interdisciplinary<br>in nature & focus<br>on developing<br>leadership<br>knowledge, skill,<br>& attitudes.                                 |
| Penn State<br>Univ.              | 10                         | Org.<br>Leadership                     | None/<br>Interdisciplinary                          | Bachelor<br>of<br>Science | 69/Restricted,<br>must meet<br>admission<br>guidelines for<br>students | Both      | 542/2003 | Non-trad<br>distance.<br>Most working<br>full time with<br>business or<br>service<br>background | The program<br>addresses 21st<br>century issues &<br>leadership from<br>different angles.                                                  |
| Purdue Univ.                     | 16<br>(Multiple<br>Campus) | Org.<br>Leadership<br>&<br>Supervision | Org. Leadership<br>& Supervision                    | Bachelor<br>of Arts       | 42/Open                                                                | Both      | 450/1991 | Trad on<br>campus<br>Supervision,<br>HRM, Gov.,<br>etc.                                         | Emphasis on real<br>world work<br>concepts &<br>principles of<br>leadership over<br>short term<br>supervisory<br>approach.                 |

|                    |                    |                              |                                       |                           |                                                                                     |                     |          |                                                                                |                                                                                                                         |
|--------------------|--------------------|------------------------------|---------------------------------------|---------------------------|-------------------------------------------------------------------------------------|---------------------|----------|--------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Rockhurst Univ.    | Primarily Adjuncts | Nonprofit Leadership Studies |                                       | Bachelor of Prof. Studies | 45                                                                                  | On Campus           | 38       | Non-Profit Organizations                                                       | Prepares students to serve as leaders of non-profit organizations (social service agencies, hospitals, churches, etc.). |
| Univ. of Richmond  | 10                 | Leadership Studies           |                                       | Bachelor of Arts          | 39/Restricted-apply fall semester of sophomore year. Chosen by a number of criteria | On Campus           | 111/1992 | Trad on campus Law, government, business, health care                          | Critical and ethical leaders who pursue change in organizations & communities.                                          |
| Wright State Univ. | 10                 | Org. Leadership              | College of Education & Human Services | Bachelor of Science       | 48/Restricted-For students who have completed a 2 year degree                       | Both (some virtual) | 450/2001 | Youth leadership, college recruiter, special events manager, outreach director | Degree completion in a management focus, multidisciplinary & application oriented.                                      |

**Mission and Purpose**

8. The overwhelming majority of schools describe their leadership major as having a focus on both theory and application.
9. Benedictine, Franklin, Penn State, Purdue, and Wright State primarily focus on a civic mission, whereas, Chapman, Dominican, Rockhurst, and Richmond focus on a more organizational theme. Peace, Fort Hays State, Our Lady of the Lake and Carroll describe their missions as including both civic and organizational objectives.
10. Participating schools shared little commonality among major scholars who impacted the development of their programs.
11. While most programs define and describe leadership as a process of change, there is a stark difference in how that change should be brought about. Some programs focus on the collective (Rockhurst, Peace, Our Lady of the Lake, and Franklin) while others focus on an individual or leader (Richmond, Wright State, and Purdue).
12. Several universities in the study focused their learning objectives on cognitive theories (Peace, Richmond, Bellevue, and Benedictine) while others focused on the development of skills and behaviors (Purdue, Rockhurst, Our Lady of the Lake, and Wright State).
13. Only five schools reported using service-learning as a pedagogy (Fort Hays State, Marietta, Peace, Rockhurst, and Richmond).

Table 5.  
Mission and Purpose Matrix

| <b>University</b> | <b>Theory or Application</b> | <b>Central Theme</b>                                                         | <b>Major Scholars</b> | <b>Learning Objectives</b>                                                         |
|-------------------|------------------------------|------------------------------------------------------------------------------|-----------------------|------------------------------------------------------------------------------------|
| Bellevue Univ.    | Both                         | Prepare students for leadership roles in profit & nonprofit organizations    |                       | Lead creative & constructive lives & encourage others to do the same               |
| Benedictine Univ. | Both                         | Behavioral perspectives in organizations & management. (Social science base) |                       | Deeper understanding of the cultural & personal dynamics in organizations          |
| Carroll College   | Application                  | Three tracks- business, nonprofit, & government                              |                       | Create new generation of leaders characterized by passion, integrity, & competency |

|                            |      |                                                                                                                         |                                                 |                                                                                                                     |
|----------------------------|------|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Chapman Univ.              | Both | Interdisciplinary & anchored in humanities, social sciences, & communication                                            | Dr. Mark Meyer (founder) & Greenleaf            | Develop interpersonal, problem solving, empowering, & critical analysis skills                                      |
| Dominican Univ.            | Both | Incorporates contemporary & holistic courses...focusing on people skills & preparing leaders for global environment     |                                                 |                                                                                                                     |
| Fort Hays State Univ.      | Both | Social change & organizational development                                                                              | Joseph Rost & Curt Brungardt                    | Understanding, competencies, & commitment in leadership                                                             |
| Franklin Univ.             | Both | Grasp the newest methods for rapidly changing business (Requires business core)                                         | Advisory board built curriculum                 | Communicating a vision, developing leader/follower relationships, & supporting the workforce                        |
| Marietta College           | Both | Practicing leadership in the liberal arts context                                                                       |                                                 | Recognize multiple perspectives in problem solving through teamwork & shared vision                                 |
| Our Lady of the Lake Univ. | Both | Develop successful leaders in business, gov, edu, and non-profit...engage leadership & individual commitment to service |                                                 | Skills necessary for social change, responsibility, & community development                                         |
| Peace College              | Both | Develop leadership capacity & assume leadership positions                                                               |                                                 | Students will examine philosophy, history, & ethical dynamics to be effective leaders in both workplace & community |
| Penn State Univ.           | Both | Preparing students for leadership in the modern workforce                                                               | Ron Filippelli – Associate Dean of Liberal Arts |                                                                                                                     |



|                    |             |                                                                                           |                                |                                                                                                                             |
|--------------------|-------------|-------------------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Purdue Univ.       |             | Create students who are prepared for leadership in business, industry, & service agencies |                                | Instilling knowledge, skills, & behaviors required of highly effective leaders                                              |
| Rockhurst Univ.    | Both        | Preparing leaders in the service of others                                                |                                | Understanding of non-profit sector through human needs, diversity, community service, & skill development                   |
| Univ. of Richmond  | Both        | Multidisciplinary & rooted in the liberal arts                                            | James McGregor Burns           | Create students who understand the moral responsibilities of leadership & are prepared for leadership in service to society |
| Wright State Univ. | Application | Provide students with broad background to prepare for supervisory & management careers    | Kotter, Posner & Kouzes, Tichy | Provide students with knowledge, skills, & values necessary for advancement in careers                                      |

## Curriculum

Analysis of the curriculum was based on the type of courses, sequence, and the volume of the subject matter. The research team defined and divided courses into six categories which emerged from the data. They include (a) *theories/history* – examination of the leadership theories and the historical foundation; (b) *skills/behaviors* – courses that focus on a particular leadership skill or set of skills (conflict management, strategic planning, decision making, etc.); (c) *context* – courses that study leadership in a particular “context” (organization, business, community, non-profit, etc.); (d) *issue* – courses that directly relate to a specific issue (ethics, gender, law, etc.); (e) *practicum* – usually independent courses like internships that include hands-on experience in leadership; and (f) *support courses* – usually offered by outside departments that support the leadership curriculum.

14. Twelve of the 15 schools offer at least one foundations course. Usually this course is early in the program. Chapman, Franklin, and Marietta offer three courses in the theories and history area. There are fewer courses under this section than the other course types.

15. Fourteen of the 15 programs offer courses in skill development. Thirteen of the 15 offer two or more courses in this area. Richmond, Penn State, Purdue, and Franklin offer at least four courses. The most popular skills courses include general leadership skills, change making, communication, critical inquiry,

motivation, and conflict management. Other courses include decision making, team processing, persuasion, planning, negotiations, professional skills, and policy making.

16. All programs have at least one context course. For most programs this is the largest area in the curriculum. Most programs have at least three or four courses under this heading. The most popular courses included organizational behavior and leadership, groups/teams, society/community, international perspective, business, and social change/movements. Other courses included political, personal, non-profit, and cultural/multicultural courses. Additionally, 13 programs have a course in organizational behavior.

17. There were a total of 42 issue courses in the 15 programs. Many of these courses served as major electives in their respective programs. The most popular included ethics, gender issues, diversity, law and policy, and service and volunteerism. Other courses included supervision, public policy, activism, human resources, and leadership development and training.

18. Most programs include an internship, practicum, or a senior project as part of their curriculum. Usually offered at the senior level, this provides students with real life experiences in leadership. Eleven of the 15 programs have at least one course in this area, and six have at least two or more courses.

19. Most programs also include supporting courses as either core, major electives, or as cognates. These are courses that are usually offered from outside the host department. Thirteen of the 15 programs include supporting courses and seven include two or more. Most of these supporting courses are traditional business, social research methods, statistics, or social psychology. Other courses include public speaking, psychology, technology, and public management.

20. While three host departments teach the overwhelming majority of coursework (Bellevue, Purdue, and Richmond), most programs use coursework from other departments and disciplines to build their curriculum.

21. The research team found that most programs have an even balance between the different types of courses in their program. While curriculum balance may or may not be a goal, most programs do have an even mixture of the different course types.

22. Finally, the research team found that most programs follow a similar course sequence pattern. Usually foundation courses were first, followed by skill, context, and issue courses and generally finished with independent study practicum.

Table 6.  
Curriculum Matrix

| <b>University</b>     | <b>Theory/History</b>                                        | <b>Skills/Behaviors</b>                                                   | <b>Context</b>                                                                                          | <b>Issues</b>                                                                                            |
|-----------------------|--------------------------------------------------------------|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| Bellevue Univ.        | *Principles                                                  | *Leadership Skills<br>*Managing Change<br>*Communication                  | *Case Studies<br>*Global<br>*Business                                                                   | *Emotional Intelligence<br>*Ethics                                                                       |
| Benedictine Univ.     |                                                              |                                                                           | *Org. Behavior<br>*Org. Analysis<br>*International Business<br>*Business Anthropology<br>*Group Process | *Social & Cultural Change                                                                                |
| Carroll College       | *Leadership Theory and Practice                              | *Leading Change                                                           | *Small Business<br>*Org. Behavior<br>*Non profit Org. (4)                                               | *Ethics<br>*Research and Development<br>*Critical Issues<br>*Laws                                        |
| Chapman Univ.         | *Intro<br>*History and Theories                              | *Communication<br>*Critical Inquiry                                       | *Team Development<br>*Understanding Organizations<br>*Multicultural Organizations                       | *Service Theme<br>*Ethics<br>*Great Leaders<br>*Topics                                                   |
| Dominican Univ.       | *The Art of Leadership                                       | *Negotiations<br>*Org. Communication                                      | *Org. Behavior                                                                                          | *Law and Ethics<br>*Org. Promotion                                                                       |
| Fort Hays State Univ. | *Concepts                                                    | *Behaviors<br>*Supervisory Leadership                                     | *Team Dynamics<br>*Org. Leadership<br>*Personal Development                                             | *Ethics<br>*Women and Leadership                                                                         |
| Franklin Univ.        | *Theory<br>*Philosophies for Leading                         | *Strategies for Motivation<br>*Planning<br>*Communication<br>*Negotiation | *Org. Behavior<br>*Small Group/Teams<br>*Self Development                                               | *Special Topics<br>*Business Ethics<br>*Diversity                                                        |
| Marietta College      | *Foundations<br>*American Leadership<br>*Theories and Models | *Behavior<br>*Dialogues (styles)                                          | *Org. Leadership<br>*Global Context                                                                     | *Great Leaders of Latin America<br>*Business Ethics<br>*Science Public Policy<br>*Environmental Activism |

|                            |                                       |                                                                                               |                                                                                                                          |                                                             |
|----------------------------|---------------------------------------|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| Our Lady of the Lake Univ. | *Foundations<br>*History & Theories   | *Decision Process<br>*Strategies & Process                                                    | *Leadership in Organizations & Society<br>*Community & Political Context<br>*Social Change<br>*Rural & Urban Communities | *Gender Issues<br>*Multi-culturalism<br>*Topics             |
| Peace College              | *Foundations                          | *Leadership Lab<br>*Group Process Lab                                                         | *Context of Leadership<br>*Group Process<br>*Social Change<br>*Political Leadership                                      | *Special Topics<br>*Ethics<br>*Leadership Development       |
| Penn State Univ.           |                                       | *Critical Thinking<br>*Motivation & Work Satisfaction<br>*Speech Communication<br>*Persuasion | *Industry Psychology<br>*Industrial Revolution<br>*Org. Communication<br>*Small Groups<br>*Work & Occupations            | *Race & Gender<br>*Ethics<br>*Law & Policy                  |
| Purdue Univ.               | *Principles<br>*Leadership Philosophy | *Applied Leadership<br>*Meeting Management<br>*Org. Change<br>*Conflict Management            | *Human Behavior in Organizations<br>*Teams<br>*Global Environment<br>*Work & Occupation                                  | *HR Issues<br>*Integrity<br>*Quality<br>*Gender/Development |
| Rockhurst Univ.            |                                       | *Admin. of Non-Profit Organizations<br>*Program Planning                                      | *Intro to Non-profit Organizations                                                                                       | *Community Engagement<br>*Volunteer Management              |

|                    |                                     |                                                                                                           |                                                                                                                                                                                                  |                                                     |
|--------------------|-------------------------------------|-----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| Univ. of Richmond  | *Foundations<br>*History & Theories | *Critical Thinking<br>*Motivation<br>*Conflict Resolution<br>*Leading Change<br>*Analysis & Making Policy | *Service to Society<br>*Groups<br>*Leadership in Organizations<br>*Political Context<br>*Social Movements<br>*International Conflict<br>*Community & Volunteer<br>*Cultural & Historical Context | *Ethics                                             |
| Wright State Univ. | *Leadership Studies                 | *Professional Skills<br>*Managing Conflict                                                                | *Org. Behavior<br>*Urban Leadership<br>*Org. Structure                                                                                                                                           | *HR<br>*Diversity Workforce<br>*Training<br>*Ethics |

Table 7.  
Additional Curriculum Matrix

| University        | Internships                      | Support                                                                                                               | General Comments                                                                                        |
|-------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| Bellevue Univ.    | *Capstone Project                | *Social Psychology                                                                                                    | *All come from Leadership Dept.                                                                         |
| Benedictine Univ. |                                  | *Org. Research<br>*Management<br>*HR Management<br>*Production & Operation Management<br>*Stats<br>*Social Psychology | *Come from 4 departments<br>- Psychology<br>- Management<br>- Sociology<br>- International<br>*Business |
| Carroll College   | *Internships                     | *HR Management<br>*Marketing<br>*Management<br>*Stats<br>*Accounting<br>*Economics<br>*Financial Management           | *Comes from the Leadership Dept., Business Dept., and Politics Dept.                                    |
| Chapman Univ.     | *Laboratory<br>*Individual Study | *Social Research                                                                                                      |                                                                                                         |

|                            |                                                                                   |                                                                                                                         |                                                                 |
|----------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| Dominican Univ.            |                                                                                   | *Accounting<br>*Econ I<br>*Econ II<br>*HR<br>*Marketing<br>*Org. Management<br>*Managing Technology                     |                                                                 |
| Fort Hays State Univ.      | *Fieldwork<br>*Internship                                                         | *Management<br>*Stats<br>*Business Cognates                                                                             | *Electives from other Departments                               |
| Franklin Univ.             | *Capstone                                                                         | *Psychology                                                                                                             | *Also needs Business Core<br>*Electives from other Departments  |
| Marietta College           | *Practicum I<br>*Practicum II<br>*Practicum III                                   |                                                                                                                         |                                                                 |
| Our Lady of the Lake Univ. |                                                                                   | *A Selection of Business Courses<br>*Public Speaking<br>*Selection of Group & Org. Courses<br>*Research & Stats Courses | *Elective, Core, & Cognates from other Departments<br>*71 hours |
| Peace College              | *Context Lab<br>*Self in Community<br>*Capstone/Personal Portfolio<br>*Internship |                                                                                                                         | *Electives from other Departments                               |
| Penn State Univ.           |                                                                                   | *Research Methods<br>*Stats<br>*Information Technology<br>*Economics                                                    | *Courses from many Departments                                  |
| Purdue Univ.               | *Experiential                                                                     | *Project Management                                                                                                     | *One Department                                                 |
| Rockhurst Univ.            | *Practicum<br>*Professional Field Experience                                      | *Marketing<br>*Finance                                                                                                  |                                                                 |
| Univ. of Richmond          | *Internships<br>*Senior Seminar<br>*Senior Project I & II                         | *Research Methods                                                                                                       | *One Department                                                 |
| Wright State Univ.         | *Leadership in Practice                                                           | *History of Management<br>*Research in Management<br>*Public Management                                                 |                                                                 |

### **Summary of Findings**



In many ways this study has provided the research team with more questions than answers. The research, while limited in scope, does provide the discipline of leadership with its first examination of the leadership major. Do these leadership degree programs share a common framework? Are there patterns of uniformity and consistency? The answer to these questions and the results of our research are definitely mixed at best. While these pioneer programs have differences in mission, philosophy, and learning objectives, it is surprising the similarities found in the various curricula.

This study recognized six notable differences in the research themes. First, the schools with leadership majors are not limited to a particular type or size of institution. Second, there is little consistency on the host division or academic department of the leadership major. Third, the total number of credit hours for the major varied greatly. Fourth, there was a stark difference between the degree programs that focused on a civic mission versus those who promote an organizational leadership objective. Next, we found little evidence that the architects of these programs were impacted by the same scholars in the field. Finally, there is also a difference between the leadership major curricula that focus on the theoretical and those that focus more on skill development.

Despite these contradictions the various leadership majors also have some similarities. Most of the commonality is found in the curriculum area research theme. For example, all programs talk about the importance of balancing both theory and practical applications of leadership. Next, most degrees include coursework in theories, skills, context, issues, practicum, and other support areas. Skills and behavior courses focus mostly on general skills, change making, communication, and conflict management. Context courses most often include organizational behavior and team/group dynamics type courses, while the most popular issue courses focus on ethics, gender, diversity, and service. Finally, the research team found that most programs had a balance between these courses and followed a logical sequence.

### **Conclusion: A Call to Action**

When examining this research, we must be cautious in that the material presented here only scratches the surface of a complex issue. It is our belief that this study does, however, provide a good beginning for understanding the similarities and differences between the various leadership majors. Most importantly, this study is a good starting point for collaboration and further research. This collaboration is critical if the leadership major is to ever become accepted as an academic discipline in higher education.

The research team suggests further exploration. More assessment data should be obtained from the 15 schools identified in this study. Further examination of leadership graduates in the workforce would provide needed evidence to strengthen the leadership major. In addition, further research into all other

categories of leadership programming not covered in this study may provide additional credibility. Combined, these studies could contribute to enhanced assessment instruments to be used across varied leadership contexts.

We recognize that it will take some time to construct the building blocks of a standardized leadership major. Current and future program architects will need to share information and seek opportunities for open discussion on these critical issues (Mangan, 2002). We encourage others to move beyond this study in the hopes of advancing this new, emerging academic major.

In closing, we as leadership educators must become much more intentional in our collaboration. We are so busy being “lone rangers” in the field that we fail to practice what we preach. We, like so many others in organizational life, talk the talk of collaboration, but fail to walk it. Until we work together and agree on common ground in teaching students historical, theoretical, and practical foundations and applications of leadership, we will struggle to gain credibility or make the case for leadership as a credible major. Furthermore, we are doing leadership graduates a disservice by not working together to create a cohesive framework within which to unify our efforts.

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## **Biography**

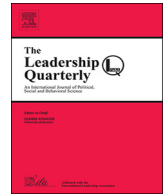
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# The state of higher education leadership development program evaluation: A meta-analysis, critical review, and recommendations

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## ABSTRACT

There is a widespread use of leadership development (LD) for students in higher education; however, less is known about the effectiveness of such practices. We provide a summative and meta-analytic review to identify the state of LD programs for students in higher education (i.e., undergraduate and graduate students). The overall objective is to demonstrate whether LD programs are implementing the most effective strategies with any discrepancy revealing a gap between management science and higher education practice. Our results suggest that LD programs within higher education work, but evaluation studies need to more effectively address endogeneity concerns. As a way moving forward, we provide recommendations for conducting a LD program evaluation study and for conducting a meta-analysis on evaluation studies. This meta-analysis can be used as a starting point for the discussion on these issues. We hope that our findings can guide the future development of LD programs.

## Introduction

Over the last three decades, a large body of knowledge has amassed regarding how to develop leaders, advancing beyond the notion that individuals can only be born as leaders. Simultaneously, the field of higher education has increasingly recognized the value in allocating resources to train future generations of leaders. A search of the top 50 universities as ranked by *U.S. News and World Report* (2018) showed that every school on the list offers some form of leadership development (LD) for both undergraduate and graduate students. However, despite the apparent widespread use of LD, little is known about the effectiveness of such practices.

Although it has been argued that leadership is a dispositional trait (Judge, Bono, Ilies, & Gerhardt, 2002), research suggests that it can also be developed through experience (Day, 2000; Day, Fleenor, Atwater, Sturm, & McKee, 2014; Day, Harrison, & Halpin, 2009; Lacerenza, Reyes, Marlow, Joseph, & Salas, 2017). In particular, LD programs can increase leadership knowledge, skills, and abilities (KSAs), which, in turn, can produce other positive downstream effects (Arvey, Rotundo, Johnson, Zhang, & McGue, 2006; Day et al., 2009). Accordingly, the literature yields promising evidence for LD programs, with several meta-analyses linking training to desirable outcomes (Avolio, Reichard,

Hannah, Walumbwa, & Chan, 2009; Burke & Day, 1986; Collins & Holton, 2004; Lacerenza et al., 2017; Powell & Yalcin, 2010). Collins and Holton's (2004) meta-analysis found that "organizations should feel comfortable that their managerial leadership development programs will produce substantial results, especially if they offer the right development programs for the right people at the right time" (p. 240). Indeed, training design may enhance individual knowledge and behavior, as well as organizational results (Collins & Holton, 2004), particularly if it takes the specific needs of the trainees into account. For example, LD programs for school administrators have been shown to improve performance, including improvements in student achievement (Darling-Hammond, LaPointe, Meyerson, Orr, & Cohen, 2007). LD programs can bolster these outcomes by drawing upon the hands-on nature of the role and implementing mentoring, coaching, and problem-based frameworks (Darling-Hammond et al., 2007). Notably, this is only one such example of optimizing LD programs for an audience; training developers should consider all delivery and design factors that may influence overall program effectiveness.

Most recently, Lacerenza et al. (2017) found support for the effectiveness of leadership programs across 335 independent employee samples. Their meta-analysis tested 15 moderators and found support for the use of needs analysis, feedback, multiple delivery methods,

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spaced training sessions, on-site training, and face-to-face delivery in improving a host of outcomes. However, mixed findings on the impact of attendance policy and content (i.e., hard skills versus soft skills) indicated that the effectiveness of these features is contingent on the desired outcome type. For example, voluntary programs led to greater transfer (i.e., use of trained skills on-the-job) of training, while mandatory attendance yielded greater results (i.e., organizational outcomes). This underscores the differential impact of LD program characteristics based on the overarching goal of the organization.

Although the aforementioned investigations contribute to our understanding of LD within organizational settings (with employees as trainees), the literature has not reviewed these programs in higher education. However, a substantial number of studies have developed, implemented, and evaluated LD programs within these contexts. The quantity of work in this area suggests that it is a topic not only of interest to educational researchers, but also one of relevance to organizational investment. Despite this, it is unclear how these interventions are being built and assessed. Thus, the current meta-analysis and review expands on previous work by examining the effectiveness of LD within higher education, thus identifying whether training characteristics shown to affect organizational outcomes can generalize to student populations. In doing so, we are also able to characterize the nature of LD research in this context, identifying and synthesizing important areas for future research and practice.

The present work comprehensively identifies the state of LD programs for higher education students. Specifically, the purpose of this paper is threefold: (1) to meta-analytically uncover the design and delivery methods that are best suited to develop students as leaders, (2) to provide a summative review of the design and delivery methods most commonly used in student LD programs, and (3) to assess the state of higher education LD program evaluation studies. Together, these objectives serve an overarching goal of demonstrating whether LD programs are implementing the most effective strategies, where any discrepancies between effectiveness and popularity of use suggest a gap between management science and higher education practice. The identification of these lapses in translation are key, as scholars have called for the rapprochement between the sciences of leadership and training to increase LD effectiveness (Barling, Christie, & Hopton, 2010).

Overall, the current investigation offers several contributions to the literature. First, we provide a meta-analytic evaluation of LD programs over a wide span of years (1951 to 2018), focusing exclusively on higher education programs for students. Second, we use updated meta-analytic techniques that account for different types of primary study designs (i.e., repeated measures, independent groups, independent groups with repeated measures; Morris & DeShon, 2002). Third, we supplement our current meta-analytic findings with a qualitative review to provide further insight into our samples and to get a better idea of the state of the field.

Lastly, and perhaps most importantly, we explain the state of the science of LD program evaluations. Specifically, we discuss endogeneity issues in LD program evaluations that potentially harm the science and provide suggestions on how to overcome these concerns. As a starting point, we provide our meta-analysis as an example of quality issues of primary studies. We provide recommendations for researchers conducting evaluation studies to proactively address this issue in future research, noting that the reduction of endogeneity concerns is of utmost importance to advance the science of leadership development in education.

#### *Outcomes of leadership development programs in higher education*

The most widely used training evaluation framework by Kirkpatrick (1959) identifies four types of desired outcomes that a training program may aim to accomplish: trainee reactions, learning, transfer of training, and results. Trainee reactions include the trainee's opinion of the

attractiveness of the program as well as perceived utility. Learning refers to an increase in the trainee's level of knowledge pertaining to a specific KSA that was targeted in the training (i.e., the "can do" outcome). Transfer of training, or behavior, is how well the trainee took what he or she learned and applied it to the workplace (i.e., the "will do" outcome). Results of training include bottom-line organizational outcomes, such as amount of sales or other financial outcomes and subordinate outcomes (e.g., turnover).

Within the LD literature, other meta-analyses have used this framework to examine the impact that LD programs have on producing desirable outcomes (e.g., Burke & Day, 1986; Lacerenza et al., 2017); the current investigation follows suit. Specifically, we are interested in testing whether the same conditions apply in LD programs conducted in higher education. We define LD programs in higher education as any program that has been systematically designed to enhance leader KSAs and other components (Day, 2000) for either undergraduate or graduate students. However, in educational contexts, the results criterion is less relevant (i.e., there are no financial outcomes to assess and only one primary sample we are aware of assessed this criterion; Benischek, 1996).

Reactions constitute a particularly important outcome type because they serve as a precursor to trainee learning and may indicate how motivated or interested the trainee is in receiving training (Hughes et al., 2016). Previous research indicates that trainees generally have positive reactions following training, universally (Brown, 2005), potentially due to perceptions of training as a form of support (Dugan & Komives, 2007; Sitzmann, Brown, Casper, Ely, & Zimmerman, 2008). However, a limited number of evaluation studies provide pre-versus post-test or control versus treatment data for reactions.<sup>1</sup>

Similar to reactions, learning (Kirkpatrick, 1956, 1967) has also been found to increase as a natural function of training at large (Hughes et al., 2016). It can be divided into the following categories: affective (i.e., attitudinal change), cognitive (i.e., acquired knowledge change), and skill-based (i.e., acquired technical or motor skill change; Kraiger, Ford, & Salas, 1993). Learning from training is posited to occur for several reasons. In the context of healthcare team training, Hughes et al. (2016) suggests that such increases are due to the perceived importance of the skills being targeted; this value signaling can motivate trainees to ensure they acquire knowledge during training. In the case of LD programs, trainees may be aware of the widespread importance of the types of interpersonal skills (e.g., communication; Hogan & Warrenfeltz, 2003) generally targeted with this form of training; this may consequently motivate trainees to engage in processes conducive to learning.

Drawing from adult learning theory, training can change preexisting ideas or assumptions about the world to produce a change in knowledge, which can explain the positive impact LD programs have on learning (Mezirow & Taylor, 2009). Similarly, a link between expectations and behaviors has been established in the greater social and organizational psychology literature (Ajzen, 1985; Armitage & Conner, 2001). Jernigan (2004) argues that in the context of general education, students may be expecting to learn as a function of being provided educational materials, predisposing them to acquire KSAs. Indeed, higher education contexts inherently prioritize and evaluate learning. For example, Fullerton (2010) required students to self-assess the degree to which they understood leadership competencies such as delegation before and immediately after a LD program. Many studies in higher education and elsewhere use similar testing methods to assess the extent to which students have gained new knowledge.

Finally, since the overarching goal of LD programs is to produce

<sup>1</sup> Due to a small number of primary samples, we were unable to meta-analytically test the effect of LD programs on reactions and result outcomes ( $k = 2$  and 1, respectively). They were appropriately excluded as specific criteria of investigation, but were included in an overall evaluation criterion.

positive changes in behavior on-the-job or in applied situations, it is unsurprising that previous evidence indicates a positive effect of training on transfer. Indeed, LD programs have been found to increase transfer among organizational employees (Lacerenza et al., 2017). Transfer has also been assessed in higher education contexts. For example, Muyia and Kacirek (2009) demonstrated transfer measurement by administering a self-report measure one year after training and asking students to rate themselves on competencies such as adaptability. Training-related enhancement in skills may be due to programs' bolstering of cognitive resources available to the trainees on-the-job (Hughes et al., 2016). In other words, Hughes et al. (2016) posit that the skills taught to trainees during training allow them to better cope with the demands of the job. For example, LD programs often enhance communication skills (Hogan & Warrenfeltz, 2003), an intrinsic requirement of many jobs. Consequently, trainees may heavily rely on using this newly-trained skill to cope with other job demands and increase overall performance (Payne, 2005; Pincus, 1986), thus allowing its transfer to the job and enhancement of leadership effectiveness. Within the context of education, these skills may be instrumental in successfully collaborating with other students and completing assignments (Schulz, 2008), leading to a higher reliance on the newly trained abilities and, ultimately, improved skills. Based on the aforementioned evidence, we hypothesize the following:

**Hypothesis 1.** Leadership development programs have a positive effect on trainee learning outcomes (H1a) and transfer (H1b).

#### Moderators of leadership development program effectiveness

As previously mentioned, several investigations have pointed to the significance of moderators in explaining leadership training effectiveness (e.g., Avolio et al., 2009; Burke & Day, 1986; Collins & Holton, 2004; Lacerenza et al., 2017). Given that these moderators are theoretically and empirically derived (e.g., Salas et al., 2012), we herein test those most applicable to the education context. Similar to training programs within other contexts, there are several design and delivery characteristics that may specifically impact LD program outcomes (e.g., Arthur, Bennett, Edens, & Bell, 2003; Baldwin & Ford, 1988). Hypotheses developed from the extant training, learning, and leadership sciences are discussed in the following section, and the relationships tested are depicted in Fig. 1.

#### Voluntary and mandatory training

Higher education LD programs can be voluntary programs that provide students with the option to attend (e.g., an optional leadership workshop open to all students) or mandatory programs that require students to participate as part of class activities. Whether an individual

decides to participate in training or is required to participate has been found to influence motivation (Hicks & Klimoski, 1987). Specifically, Hicks and Klimoski (1987) found that perceived pressure to attend training decreased trainee motivation. Self-determination theory (Ryan & Deci, 2000) may be able to explain this occurrence, as it proposes that autonomy fosters motivation; thus, when students are given the option to participate in training, this need for autonomy is fulfilled (Cohen, 1990).

Training theory highlights the importance of trainee motivation in facilitating outcomes (Baldwin & Ford, 1988). A key finding from the training literature is the importance of motivation, or the decision to pursue some behaviors over others (Tsai & Tai, 2003), in increasing training effectiveness (Blume, Ford, Baldwin, & Huang, 2010; Curado, Henriques, & Ribeiro, 2015; Noe & Schmitt, 1986). Motivation can serve as a buffer against criticism and lack of reinforcement, ultimately leading to greater use of the trained KSAs on-the-job or during class (Noe & Schmitt, 1986; Steers & Porter, 1975). In accordance with this theory and evidence, Curado et al. (2015) found that voluntary training programs were associated with a higher motivation to transfer than mandatory programs. As motivation has been meta-analytically linked with higher rates of transfer (Blume et al., 2010), we expect voluntary programs to be more effective than mandatory programs. Given this link between motivation and voluntary training, we hypothesize:

**Hypothesis 2.** Voluntary leadership development programs enhance trainee learning (H2a) and transfer (H2b) outcomes to a greater degree than involuntary programs.

#### Timing structure of training delivery

The typical timing structure for a higher education course is fairly stable, with students meeting weekly over the course of multiple weeks. Similar to the distinction between a lump sum payment of money versus an annuity, this training structure contrasts with "massed" schedules wherein students are exposed to all course materials in a single sitting. The argument for the former approach, referred to as a *spacing effect* or *technique* (Hintzman, 1974), is rooted in learning efficiency theories. For example, cognitive load theory (e.g., van Merriënboer & Sweller, 2005) suggests that an individual's working memory capacity is limited; thus, effective learning occurs only if this mental bandwidth has not been overwhelmed. By temporally spacing out training sessions, learning is more likely to occur because cognitive load is less likely to be exhausted (Janiszewski, Noel, & Sawyer, 2003; Lee & Genovese, 1988). As such, we argue for the positive effects of spaced training programs within the higher education context and hypothesize the following:

**Hypothesis 3.** Leadership development programs spanning multiple

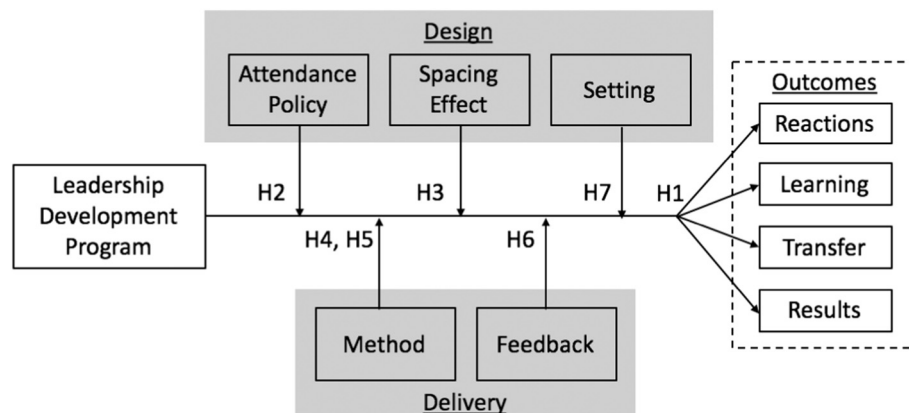


Fig. 1. The design and delivery of leadership development programs. This figure illustrates the relationships tested within the current meta-analytic investigation.

training sessions result in greater effects on learning (H3a) and transfer (H3b) outcomes compared to training programs with one massed training session.

#### *Training program delivery methods*

Training programs can leverage the following three primary delivery methods: information, demonstration, and practice. Information-based training provides the trainee with knowledge on a topic and can convey this through mediums such as the instructor providing lectures, presentations, and reading materials. Demonstration-based training offers trainees examples to which they can relate; this may involve watching real-life situations on video or in person. Lastly, practice-based training gives trainees an opportunity to perform what is being taught, including activities such as roleplaying, on-the-job training, in-basket exercises, and simulations.

Of all three methods, theory and evidence suggest that practice is the most effective method for fostering skills (Burke & Day, 1986; Weaver, Rosen, Salas, Baum, & King, 2010). Constructivist learning theory (Piaget, 1952) argues that learning is enriched when the individual reflects and develops understanding and knowledge through their own experiences; in other words, learning by doing. Practice allows trainees to enact needed behavioral skills in a safe environment; in the case of LD, this is especially critical because the majority of such skills relate to interpersonal interaction (e.g., building relationships, communication, team building; Hogan & Warrenfeltz, 2003). We argue that practice, such as roleplaying interpersonal interactions in the classroom, will facilitate these skills more effectively than passively receiving information about them as in the case of information or demonstration (Garavaglia, 1993). In practice, trainees can engage in conversations and scenarios that mirror real-world situations requiring specific interpersonal skills, thus allowing them to build the needed skills. In accordance with this rationale, we hypothesize:

**Hypothesis 4.** Leadership development programs incorporating only a practice-based method lead to greater effects on trainee learning (H4a) and transfer (H4b) outcomes compared to programs incorporating only information- or demonstration-based methods.

Although one training method may prove to be more effective than the others, the general training literature includes over 30 years of research that suggests training can benefit from using a combination of all three methods (Salas et al., 2015; Salas & Cannon-Bowers, 2001). Given that each has its unique advantages and drawbacks, using all three methods could be a more holistic approach to training. Information can provide trainees with the knowledge and understanding to precede practice opportunities (e.g., Birnbaum, 1984). Demonstration can supplement information by presenting a visible representation and relatable examples of the newly learned knowledge (Salas & Cannon-Bowers, 2000). Finally, practice provides the trainees an opportunity to apply what they learned in a non-threatening environment, such as practicing with other students in order to enhance the learning experience (McCauley & Van Velsor, 2004; Piaget, 1952). Therefore, we hypothesize:

**Hypothesis 5.** Leadership development programs incorporating information-, demonstration-, and practice-based methods demonstrate greater learning (H5a) and transfer (H5b) effects on trainee outcomes compared to programs implementing only one (e.g., information only) or two methods (e.g., demonstration and information).

#### *Feedback*

Feedback theory states that feedback should address both successes and failures to maintain and adjust behavior, respectively (Kluger &

DeNisi, 1996); this input can be particularly useful during formative years. Training literature supports the use of feedback because it provides trainees with a better understanding of their ability level and what specific aspects of their performance need to be improved (Brown, Bransford, Ferrara, & Campione, 1983; Komaki, Heinzmann, & Lawson, 1980; Salas et al., 2015). Moreover, it relates the course material to the student in a personalized manner (Hounsell, 2003). Conversely, in the absence of feedback, a student may have a more difficult time gauging his/her ability level and how the material relates to him/herself, consequently hindering any necessary revisions in behavior and reducing the transfer of learning (Ford, Smith, Weissbein, Gully, & Salas, 1998). Notably, some approaches to delivering feedback may work better than others, such as providing both positive and negative feedback as opposed to solely negative feedback (Ellis & Davidi, 2005). All of this considered, we posit that delivering feedback is more effective than not using it. As such, we hypothesize:

**Hypothesis 6.** Leadership development programs reporting the use of feedback display a greater effect on trainee learning (H6a) and transfer (H6b) outcomes compared to programs that do not report the use of feedback.

#### *Online and face-to-face training*

Online training has become a prevalent approach to providing instruction within education (c.f., Clarke, 2004). As such, this self-administered modality (as compared to traditional face-to-face instruction) has particular influence and relevance to students receiving LD in today's educational context. However, online training programs possess features that may make them less effective than face-to-face instruction. First, self-administered, online training may be less adaptive to trainee reactions in real-time, compared to in-person formats (Gerbaud, Gouranton, & Arnaldi, 2009). For example, instruction provided face-to-face is facilitated by a live trainer, who can alter the training content as needed to ensure and maintain the optimal level of difficulty for engagement (Magerko, Wray, Holt, & Stensrud, 2005). Conversely, online platforms are more likely to possess rigid parameters of adaptation, including being pre-programmed with specific content (Appana, 2008). Thus, although technology is becoming more sophisticated, current online training generally does not achieve the same level of flexibility and responsiveness as in-person approaches.

A second concern centers around the depth of education achieved by virtual programs. Trainers have criticized online instruction because they do not believe it conveys difficult teaching and learning problems (Conlon, 1997). Alternatively, in-person techniques such as lectures have evinced positive outcomes (Arthur et al., 2003). This may be attributable to the fact that live facilitators can provide more specific guidance, adapt material, and provide a customized experience to trainees, which can increase engagement and lead to enhanced learning (Merriam, 2001).

Finally, researchers have identified a number of barriers that hinder effective online education, including the quickly-evolving nature of technology, the complexity of networked systems, the lack of stability in online environments, and the limited understanding of student and trainer preparation needed to use such technology (Brandt, 1996). Indeed, not all courses can effectively move from the classroom to computers (Appana, 2008). In-person instruction inherently does not suffer from the same technical issues that can plague online education platforms. In considering each of these factors, we thus hypothesize:

**Hypothesis 7.** Face-to-face leadership development programs with live facilitators increase positive trainee learning (H7a) and transfer (H7b) outcomes to a greater degree than online, self-administered programs.

## Research questions

In addition to these meta-analytic hypotheses, we also pose a number of exploratory research questions that we address through a descriptive review of these samples. These lines of inquiry are designed to better characterize the LD programs being developed, implemented, and evaluated today.

First, Kraiger et al. (1993) note that learning outcomes are multi-dimensional, indicating that learning can manifest itself through changes in cognitive, affective, or skill capacities. Cognitive learning includes verbal knowledge, knowledge organization, and cognitive strategies. In terms of LD, a training program can train individuals how to develop a leader mental model, which is how leaders view themselves, others, and the environment; this is helpful for shaping behavior, adapting quickly, and forming heuristics for future leadership experiences (Day et al., 2009). Skill-based outcomes include skill compilation and automaticity. Finally, attitudinal outcomes include motivational disposition, self-efficacy, and goal setting; these outcomes also map onto intrapersonal skills that Hogan and Warrenfeltz's (2003) domain model identifies as the earliest stage of development for leaders. Given the lack of theory regarding exactly what types of outcomes are most beneficial to train at the student level, we cannot assert what student LD programs should focus on or evaluate. However, we pose the following exploratory question to understand what occurs most in practice:

*Research Question 1: What type of learning outcomes are measured most often in higher education LD programs?*

There are a few methods that are commonly used to evaluate training: self-report, observer ratings, objective scores (e.g., declarative knowledge test), and peer evaluations. Evaluations can be completed before and after the training using a repeated measures design. Alternatively, one evaluation can be collected from a trained group and compared with results from a control group (i.e., independent groups design). Some measurement sources are less accurate than others (Wexley & Latham, 2002). In particular, self-report approaches may lead to inflated scores, whereas objective reports are less prone to issues of bias and dishonesty (Blume et al., 2010). The training literature suggests using multiple methods in order to compensate for the strengths and weaknesses of each method (Salas et al., 2015). In practice, we hope to see limited reliance on self-report assessments and, rather, a combination of multiple approaches, which leads us to ask:

*Research Question 2: How are the outcomes evaluated most often in higher education LD programs?*

More can be revealed about the effectiveness of training depending on the timing of the evaluation (Phillips, 2012). Although it is easier to evaluate training immediately after the training is complete (Phillips, 2012), this can only explain how much was learned from the program. Including a delay between the training and evaluation or sustaining measurement longitudinally can demonstrate how much knowledge was actually retained from the program and provide insight into transfer (Baldwin & Ford, 1988). In practice, an evidence-based approach would involve the implementation of evaluations at multiple time points, including long after training is completed. Therefore, we ask:

*Research Question 3: When are the outcomes typically evaluated in higher education LD programs?*

Although our meta-analytic investigation can determine which of the three main delivery methods is most effective, there are many specific instructional strategies within each delivery method that can be used. For example, a practice-based strategy known as roleplay allows trainees to act out a scenario related to leadership. Another practice-based strategy is the use of case studies, which are detailed examinations of scenarios that trainees read to identify and solve a problem. Information-based approaches include lectures, reading materials, and discussion. Demonstration-based strategies include watching video examples and observing live re-enactments. Given the multitude of possible approaches, we would like to know the specific instructional

strategies that are being used in practice and how many strategies a single LD program typically uses. This leads to our final exploratory question:

*Research Question 4: What specific instructional strategies are used most often in higher education LD programs?*

## Method

### Literature search and inclusion criteria

We employed several approaches to identify relevant articles. To begin, studies were collected through an electronic search of the following databases: PsycINFO (1886-August 2018), Business Source Premiere (1886-August 2018), and ProQuest Dissertations and Theses (1886-August 2018). Although the search dated back to 1886, the earliest primary study was published in 1955 (Barnlund, 1955). The following search terms were used to facilitate these searches: *leadership*, *leader*, *manag\** (the use of the asterisk denotes a wildcard operator, which returns articles with keywords beginning with the root, e.g., *manager*), *executive*, *supervisory*, *training*, and *development*. We also included searches adding the terms: *charisma\**, *transformational*, *authentic*, *ideological*, and *pragmatic* in order to include any relevant training evaluations related to main leadership styles covered in the literature (Day et al., 2014; Gooty, Connelly, Griffith, & Gupta, 2010; Griffith, Connelly, Thiel, & Johnson, 2015). Finally, we reviewed the reference lists from relevant meta-analyses to identify additional articles (Arthur et al., 2003; Avolio et al., 2009; Burke & Day, 1986; Collins & Holton, 2004; Keith & Frese, 2008; Lacerenza et al., 2017; Powell & Yalcin, 2010; Taylor, Russ-Eft, & Taylor, 2009).

To be considered appropriate for inclusion, the articles had to meet the following criteria: (a) trainee participants were students in higher education (i.e., undergraduate or graduate students); (b) the study included an empirical assessment of a leadership, leader, managerial, supervisory, or executive training (i.e., development or coaching) program; (c) the study employed a repeated measures, independent groups, or an independent groups with repeated measures design; (d) the study included an adult sample (i.e., over 18 years of age, which excludes K-12 education contexts); (e) the article was written in English; and (f) the article provided sample size and effect size information, or enough information to calculate an effect size.

This resulted in a final sample of 73 independent samples with 5654 participants; 56 undergraduate samples, 12 graduate samples, and five samples that were mixed. The programs lasted anywhere between 30 min to three semesters. Samples reported the length of the program differently (i.e., hours, weeks, months, and semesters). Using as much information as we could draw from the samples, we provide the ranges of time spent in training based on how the length was reported. A total of 27 (37.0%) samples reported duration in minutes and hours, ranging in length from 30 min to 45 h. The average for such programs was 18.44 h. Duration was reported in weeks for 20 (27.4%) programs and these ranged between one week to 18 weeks with an average of 10.7 weeks. Length of training was reported in months for 3 (4.1%) training programs, which were three, four, and six months long. Additionally, nine (12.3%) programs reported duration in school semesters, six of which were a semester long, and three programs that were three semesters long. Lastly, 14 (19.2%) programs did not report training duration.

### Coding procedures

We extracted information relevant to the following for both our frequency and meta-analytic analyses: (a) outcome type, (b) attendance policy (i.e., voluntary vs. mandatory), (c) spacing effect (i.e., massed vs. spaced sessions), (d) delivery methods (i.e., information, demonstration, practice, and feedback), (e) training setting (i.e., online vs. face-to-face programs), and (f) training evaluation (e.g., how the outcomes



were collected). Training evaluation could be obtained through self-report, objective scores (e.g., declarative knowledge tests), or observer ratings. Regarding outcome type, we used the framework presented by Kirkpatrick (1959). This classifies evaluations into the following categories: (a) reactions (i.e., the extent to which trainees enjoyed or perceived the training as useful relative to how they initially believed they would enjoy or perceive it as useful), (b) learning (i.e., the extent to which trainees acquired new KSAs due to training), (c) transfer (i.e., the extent to which trained KSAs are demonstrated on the job), and (d) results (i.e., the extent to which the training impacted organizational outcomes). As previously mentioned, due to a small number of primary samples, we were unable to meta-analytically test the effect of LD programs on reactions and result outcomes.

Each article included was double-coded by two of four authors, who had all undergone rater training. Inter-coder agreement, calculated as the percentage of training features coded in agreement out of 9601 decisions, was 94.0%. To account for the possibility of agreement occurring by chance, Cohen's kappa was calculated for all variables with binary categories. These nine variables ranged from kappas of 0.83 to 0.99, with an average of 0.90. Any discrepancies were resolved through discussion. Coded information from the primary samples is presented in Table 1.

### Analyses

For the meta-analytic methods, the effect size used was a Cohen's  $d$ . If a Cohen's  $d$  was not directly reported, it was calculated from other statistics when possible (e.g., means and standard deviations,  $t$ -values). If multiple, non-independent effect sizes were reported, we used the intercorrelations among the measures to create a linear composite as described by Nunnally (1978). Similar to procedures used in previous meta-analyses (e.g., DeChurch & Mesmer-Magnus, 2010; Litwiller, Snyder, Taylor, & Steele, 2017), if intercorrelations were not reported, we averaged the effect sizes.

As noted, three types of study designs were included within our analyses (i.e., repeated measures, independent groups, and independent groups with repeated measures). It is necessary to convert effect sizes from multiple study designs to a single study design effect size because the estimated population parameters are influenced by the design type of each study (c.f., Ray & Shadish, 1996). We used the procedures described by Morris and DeShon (2002) to convert the effect sizes into a common metric, the repeated measures effect size. Before making this adjustment, we tested the meta-analytic effect sizes to assess whether they differed as a function of design type and found no statistically significant differences. Therefore, we proceeded to convert all effect sizes into the repeated measures effect size.

The equations we applied are reported in Morris and DeShon (2002). To apply these procedures, it is necessary to calculate  $r_{pre,post}$  (i.e., the correlation between pre- and post-training scores). Given that few primary samples reported this metric, we followed recommendations from Morris and DeShon (2002) to use the inverse sampling error variance-weighted average  $r_{pre,post}$  across repeated measures samples. The  $r_{pre,post}$  was 0.46. Following these procedures, we used a random effects meta-analysis, as suggested by Morris and DeShon (2002), that weights effect sizes by the reciprocal of the sampling variance to account for sampling error variance (Hedges & Olkin, 1985). We also followed procedures outlined by Hunter and Schmidt (1990, 2004) to correct for criterion-related unreliability.

To test for significant moderators, we used  $t$ -tests of the mean effect sizes (c.f., Hunter & Schmidt, 2004). Per recommendations from Hunter and Schmidt (2004), we corrected for unreliability in the effect sizes using artifact distributions which were created from averaging the internal consistency estimates reported in the primary samples. The mean reliability of an overall criterion for use in all moderator analyses and the overall effectiveness analysis was 0.93. For the analyses examining effectiveness for learning and transfer outcomes, the mean reliabilities

were 0.88 and 0.95, respectively.

### Results

Table 2 presents the results of the overall meta-analytic  $d$  effect size combined across evaluation types (i.e., overall). Tables 3 and 4 list meta-analytic results for each moderator category for learning and transfer outcomes, respectively. We report both the corrected average  $d$  value (corrected for unreliability in the criterion and sampling error variance; Hunter & Schmidt, 2004) and the observed  $d$  value. Statistical significance of the effect size was tested by interpreting the 95% confidence interval.

To assess for publication bias, we conducted a trim and fill analysis based on procedures identified by Duval and Tweedie (2000). Results from a fixed effects model on the overall effect suggest that zero samples were imputed to the left of the mean, indicating that publication bias is most likely not present. We also supplemented the trim and fill analysis with an a priori selection model based on procedures from Vevea and Woods (2005), which also indicated that publication bias likely did not occur. No outliers were revealed using the one-sample removed analysis (Borenstein, Hedges, Higgins, & Rothstein, 2009).

We found full support for Hypotheses 1a and b as results suggest LD programs within the student (i.e., undergraduate and graduate) context are effective at producing learning (corrected  $d = 0.50$ , 95% CI [0.37, 0.63]) and transfer (corrected  $d = 0.36$ , 95% CI [0.16, 0.56]) outcomes.

We found mixed support for Hypothesis 2, which stated that voluntary LD programs would lead to greater outcomes compared to involuntary LD programs ( $t(55) = 2.95$ ,  $p < .05$ ). Voluntary programs substantially improved trainee learning more than involuntary programs ( $t(45) = 2.74$ ,  $p < .05$ ), but did not reliably increase transfer more than involuntary programs ( $t(12) = 1.38$ ,  $p > .05$ ).

We did not find support for Hypothesis 3, which predicted that programs with temporally spaced training sessions would lead to greater outcomes compared to those implementing a single massed training session; for example, learning was not differentially affected by temporal design ( $t(52) = 1.46$ ,  $p > .05$ ) and there were not enough primary samples reporting no spacing ( $k = 1$ ) to test the relationship for transfer. Furthermore, out of the 52 samples who reported using spaced training, 6 (11.5%) provided at least a day between sessions, 3 (5.8%) spaced out sessions at least a week apart, and 43 (82.7%) LD programs did not provide details regarding the duration of the spacing that occurred.

We did not find support for our hypotheses concerning delivery method(s). That is, findings for Hypothesis 4 did not support greater outcomes of solely practice-based methods as opposed to information-only methods, both in terms of learning ( $t(12) = 0.73$ ,  $p > .05$ ) and transfer ( $t(3) = 1.04$ ,  $p > .05$ ). Notably, there were not enough primary samples to test the relationship with demonstration methods ( $k = 1$ ). Hypothesis 5 considered the quantity of methods used, anticipating that programs that combined all approaches would be superior to other single and paired methods. This was not found to be true in the case of learning outcomes, when comparing against information only ( $t(19) = 0.02$ ,  $p > .05$ ), practice only ( $t(15) = 0.82$ ,  $p > .05$ ), and information- and practice-based methods ( $t(37) = 0.85$ ,  $p > .05$ ). Although the difference in sizes comparing a combined information, demonstration, and practice approach with information-only ( $t(5) = 1.55$ ,  $p > .05$ ) and practice-only ( $t(4) = 0.47$ ,  $p > .05$ ) were not statistically significant in predicting transfer outcomes, results trended in the hypothesized direction.

Results were similar for Hypothesis 6, which suggested that programs incorporating the use of feedback would be more effective than those that did not. Results trended in the hypothesized direction, but were not statistically significant for both learning ( $t(64) = 1.58$ ,  $p > .05$ ) and transfer ( $t(13) = 0.94$ ,  $p > .05$ ) outcomes.

Hypothesis 7 was not supported. The meta-analytic effect size for face-to-face programs was not reliably different compared to that of

**Table 1**  
Primary sample codes.

| Author(s)                                                      | Publication status <sup>a</sup> | Design <sup>b</sup> | N1  | N2  | $\alpha$ | Attendance policy <sup>c</sup> | Delivery method(s) <sup>d</sup> | Feedback <sup>e</sup> | Setting <sup>f</sup> | Dependent variable(s) | $d_{RM}$ |
|----------------------------------------------------------------|---------------------------------|---------------------|-----|-----|----------|--------------------------------|---------------------------------|-----------------------|----------------------|-----------------------|----------|
| Antonakis, J., Fenley, M., & Liechti, S. (2011)                | P                               | RM                  | 41  | 41  |          | V                              | I, D, P                         | Yes                   | F                    | Transfer              | 1.57     |
| Barnlund, D. C. (1955)                                         | P                               | IG                  | 41  | 41  | 0.96     |                                | I, D, P                         |                       | F                    | Learning              | 0.28     |
| Benischek, S. A. (1996)                                        | U                               | RM, IG              | 43  | 46  | 0.91     | V                              |                                 |                       | F                    | Transfer, results     | 0.03     |
| Bradley, M. J. (1994)                                          | U                               | RM                  | 86  | 86  | 0.93     | V                              | I, P                            |                       | F                    | Learning              | 0.36     |
| Brown, N. R. P. (2015)                                         | U                               | RM                  | 15  | 15  |          | V                              | D                               |                       | F                    | Learning              | 0.11     |
| Bruck, J. L. (1997)                                            | U                               | RM                  | 61  | 61  | 0.92     |                                | I                               |                       | F                    | Learning              | 0.16     |
| Buschlen, E. (2009)                                            | U                               | RM                  | 108 | 108 |          | V                              | I, D, P                         |                       | F                    | Transfer              | 0.38     |
| Cajiao, J., & Burke, M. J. (2016)                              | P                               | RM                  | 246 | 246 | 0.84     | V                              |                                 |                       | F                    | Learning              | -0.05    |
| Chang, S., Bhat, C. S., & Chen, Y. (2017)                      | P                               | RM                  | 31  | 31  |          | V                              | I, P                            |                       | F                    | Learning              | 0.41     |
| Sample A                                                       |                                 |                     |     |     |          |                                |                                 |                       |                      |                       |          |
| Chang, S., Bhat, C. S., & Chen, Y. (2017)                      | P                               | RM                  | 46  | 46  |          | V                              | I, P                            | Yes                   | F                    | Learning              | 0.29     |
| Sample B                                                       |                                 |                     |     |     |          |                                |                                 |                       |                      |                       |          |
| Christensen, M. A. (2015)                                      | U                               | RM, IG              | 50  | 73  |          | V                              | I, P                            |                       | F                    | Learning              | 0.75     |
| Cressman, K. K. (2005)                                         | U                               | RM                  | 28  | 28  |          |                                | I, D, P                         | Yes                   | F                    | Learning              | 0.15     |
| Downs, C. W. (1974) Sample A                                   | P                               | RM                  | 49  | 49  |          |                                |                                 |                       | F                    | Reactions, learning   | 0.39     |
| Downs, C. W. (1974) Sample B                                   | U                               | RM                  | 73  | 73  |          |                                | D, P                            |                       | F                    | Reactions, learning   | 0.35     |
| Eddy, C. L. (2012) Sample A                                    | U                               | RM, IG              | 19  | 23  |          | V                              | I                               |                       | F                    | Learning              | -0.03    |
| Eddy, C. L. (2012) Sample B                                    | U                               | RM, IG              | 37  | 23  |          | V                              | I                               |                       | F                    | Learning              | -0.41    |
| Eddy, C. L. (2012) Sample C                                    | U                               | RM, IG              | 26  | 23  |          | V                              | I                               |                       | F                    | Learning              | -0.29    |
| Eddy, C. L. (2012) Sample D                                    | U                               | RM, IG              | 23  | 23  |          | V                              | I                               |                       | F                    | Learning              | -0.06    |
| Endress, W. L. (2000)                                          | U                               | RM, IG              | 77  | 93  | 0.99     | V                              | I, P                            |                       | F                    | Learning              | -0.06    |
| Ericksen, K. S. (2009)                                         | U                               | RM                  | 12  | 12  |          |                                |                                 |                       |                      | Learning, transfer    | 0.32     |
| Facca-Miess, T. M. (2015)                                      | P                               | IG                  | 158 | 283 |          | M                              | I, P                            |                       | F                    | Learning              | 0.17     |
| Farrell, N. A. K. (2003)                                       | U                               | RM                  | 45  | 46  |          | M                              | I, P                            |                       | Mix                  | Learning              | 0.40     |
| Fiedler, F. E., & Mahar, L. (1979)                             | P                               | IG                  | 11  | 33  |          | V                              | I                               |                       |                      | Transfer              | 0.32     |
| Fields, A. R. (2010)                                           | U                               | RM                  | 15  | 15  | 0.95     | V                              | I, P                            |                       | F                    | Learning              | 0.64     |
| Friedman, S. D., & Westring, A. (2015)                         | P                               | RM                  | 242 | 242 |          | V                              | P                               |                       | Mix                  | Learning, transfer    | 0.70     |
| Fullerton, J. R. (2010)                                        | U                               | RM                  | 5   | 5   |          | V                              | I, D, P                         |                       | F                    | Learning              | 0.50     |
| Gabriel, J. (2015)                                             | U                               | RM                  | 39  | 106 |          | V                              |                                 |                       |                      | Learning              | -0.14    |
| Goertzen, B. J., & Whitaker, B. L. (2015)                      | P                               | RM                  | 55  | 118 | 0.94     | V                              | I, P                            | Yes                   | F                    | Learning              | 0.25     |
| Sample A                                                       |                                 |                     |     |     |          |                                |                                 |                       |                      |                       |          |
| Goertzen, B. J., & Whitaker, B. L. (2015)                      | P                               | RM                  | 72  | 145 | 0.94     | V                              | I, P                            | Yes                   | V                    | Learning              | 0.37     |
| Sample B                                                       |                                 |                     |     |     |          |                                |                                 |                       |                      |                       |          |
| Goertzen, B. J., & Whitaker, B. L. (2015)                      | P                               | RM                  | 83  | 490 | 0.94     | V                              | I, P                            | Yes                   | Mix                  | Learning              | 0.12     |
| Sample C                                                       |                                 |                     |     |     |          |                                |                                 |                       |                      |                       |          |
| Gonzalez, K. A. (2016) Sample A                                | U                               | RM                  | 29  | 29  | 0.99     | V                              | I, P                            |                       | F                    | Learning              | 0.42     |
| Gonzalez, K. A. (2016) Sample B                                | U                               | RM                  | 51  | 51  | 0.99     | V                              | I, P                            |                       | F                    | Learning              | 0.16     |
| Gonzalez, K. A. (2016) Sample C                                | U                               | RM                  | 26  | 26  | 0.99     | V                              | I, P                            |                       | F                    | Learning              | 0.38     |
| Grantham, S., Pidano, A. E., & Whitcomb, J. M. (2014) Sample A | P                               | RM                  | 17  | 17  |          | V                              | I, P                            |                       | F                    | Learning              | 0.33     |
| Grantham, S., Pidano, A. E., & Whitcomb, J. M. (2014) Sample B | P                               | RM                  | 17  | 17  |          | V                              | I, P                            |                       | F                    | Learning              | 1.02     |
| Hamdani, M. R. (2018)                                          | P                               | RM                  | 34  | 34  |          | M                              | I, D, P                         | Yes                   | F                    | Learning              | 0.35     |
| Harvill, R., West, J., Jacobs, E. E., & Masson, R. L. (1985)   | P                               | RM, IG              | 26  | 10  |          |                                |                                 |                       | F                    | Learning              | 1.25     |
| Heft, M., & Deni, R. (1984)                                    | P                               | IG                  | 24  | 24  |          | M                              | I                               |                       | F                    | Learning              | 0.52     |
| Horowitz, R. (2012) Sample A                                   | U                               | RM                  | 100 | 100 | 0.95     | V                              |                                 |                       |                      | Transfer              | 0.28     |
| Horowitz, R. (2012) Sample B                                   | U                               | RM                  | 104 | 104 | 0.95     | V                              |                                 |                       |                      | Transfer              | -0.12    |
| Jeong, K., & Bozkurt, I. (2014)                                | P                               | RM                  | 47  | 47  |          | M                              | P                               |                       | V                    | Learning              | 0.53     |
| Kruml, S. M., & Yockey, M. D. (2011)                           | P                               | RM                  | 78  | 78  |          |                                | I, D, P                         | Yes                   |                      | Learning              | 0.39     |
| Larsen, J. A. (1997) Sample A                                  | U                               | RM, IG              | 120 | 104 |          | V                              | I, P                            |                       | V                    | Learning              | 1.20     |
| Larsen, J. A. (1997) Sample B                                  | U                               | RM, IG              | 118 | 104 |          | V                              | I, P                            |                       | V                    | Learning              | 0.88     |
| Lehnert, A. B. (2009) Sample A                                 | U                               | RM                  | 48  | 48  | 0.95     |                                | I, P                            | Yes                   | V                    | Learning              | 1.22     |
| Lehnert, A. B. (2009) Sample B                                 | U                               | RM                  | 47  | 47  | 0.95     |                                | P                               |                       | V                    | Learning              | -0.39    |
| Litt, S. D. (2010) Sample A                                    | U                               | RM                  | 32  | 34  | 0.79     | M                              | I                               | Yes                   |                      | Transfer              | 0.15     |
| Litt, S. D. (2010) Sample B                                    | U                               | RM                  | 25  | 29  | 0.79     | M                              | I                               | Yes                   |                      | Transfer              | 0.18     |
| Livingston, R. E. (2003)                                       | U                               | RM                  | 19  | 21  |          |                                | I, D                            |                       | F                    | Learning              | 0.09     |
| Matsos, C. T. (1997)                                           | U                               | RM, IG              | 35  | 35  |          | V                              | I                               |                       | F                    | Learning              | 0.35     |
| McCormick, M. J. (1999)                                        | U                               | IG                  | 140 | 140 | 0.89     | V                              | I, D, P                         | Yes                   | F                    | Learning              | 2.11     |
| McEnrue, M. P., Groves, K. S., & Shen, W. (2009)               | P                               | RM, IG              | 75  | 60  | 0.95     |                                | I, D, P                         | Yes                   | F                    | Learning              | 0.33     |
| Midgett, A., Hausheer, R., & Dumas, D. M. (2016)               | P                               | RM                  | 20  | 20  | 0.96     | M                              | I, P                            |                       | F                    | Learning              | 0.39     |
| Miscenko, D., Guenter, H., & Day, D. V. (2017)                 | P                               | RM                  | 98  | 98  |          | M                              | I, D, P                         |                       | F                    | Learning              | 0        |
| Muyia, H. M., & Kacirek, K. (2009)                             | P                               | RM                  | 43  | 112 |          | V                              | I, D, P                         | Yes                   |                      | Transfer              | 0.02     |
| Newstrom, J. W. (1971) Sample A                                | P                               | RM                  | 24  | 24  |          |                                | I, P                            |                       | F                    | Learning              | 0.57     |
| Newstrom, J. W. (1971) Sample B                                | P                               | RM                  | 21  | 21  |          |                                | I, P                            |                       | F                    | Learning              | 0.48     |
| Putman (1992)                                                  | U                               | RM                  | 192 | 192 | 0.95     | V                              | P                               |                       | V                    | Transfer              | 0.05     |
| Radnitzer, K. D. (2010)                                        | U                               | RM                  | 11  | 11  |          | V                              |                                 |                       | F                    | Transfer              | -0.02    |

(continued on next page)

Table 1 (continued)

| Author(s)                                     | Publication status <sup>a</sup> | Design <sup>b</sup> | N1  | N2  | $\alpha$ | Attendance policy <sup>c</sup> | Delivery method(s) <sup>d</sup> | Feedback <sup>e</sup> | Setting <sup>f</sup> | Dependent variable(s) | $d_{RM}$ |
|-----------------------------------------------|---------------------------------|---------------------|-----|-----|----------|--------------------------------|---------------------------------|-----------------------|----------------------|-----------------------|----------|
| Rohs, F. R. (1999)                            | P                               | RM                  | 30  | 30  | 0.98     |                                | I, P                            |                       | F                    | Learning              | 0.72     |
| Rosch, D. M., & Stephens, C. M. (2017)        | P                               | RM                  | 226 | 226 |          | V                              |                                 |                       | F                    | Learning              | 0.54     |
| Sadler, T. D. (2015)                          | U                               | RM, IG              | 147 | 147 | 0.91     | M                              | I, D, P                         |                       | F                    | Learning              | 0.10     |
| Sampl, J., Maran, T., & Furtner, M. R. (2017) | P                               | RM, IG              | 39  | 41  |          | V                              | I, P                            |                       | F                    | Learning, transfer    | 0.77     |
| Sidor, S. M. (2007)                           | U                               | RM                  | 91  | 91  |          | V                              | P                               | Yes                   | V                    | Learning              | 0.19     |
| Siewiorek, A. et al. (2013)                   | P                               | RM                  | 8   | 8   |          | V                              | P                               |                       | F                    | Learning              | -0.08    |
| Singleton, T. M. (1978)                       | P                               | RM                  | 34  | 34  |          | V                              | I, D, P                         | Yes                   | F                    | Learning              | 0.39     |
| Stover, S. H. (1988) Sample A                 | U                               | RM                  | 38  | 38  |          | V                              | I                               |                       | F                    | Learning              | 0.78     |
| Stover, S. H. (1988) Sample B                 | U                               | RM                  | 48  | 48  |          | V                              | I                               |                       | F                    | Learning              | 2.39     |
| Stover, S. H. (1988) Sample C                 | U                               | RM                  | 35  | 35  |          | V                              | I, D, P                         | Yes                   | F                    | Learning              | 2.49     |
| Teckchandani, A., & Schultz, F. C. (2014)     | P                               | RM                  | 93  | 93  |          | V                              | I, P                            |                       | F                    | Learning              | 0.50     |
| Towler, A. J. (2003)                          | P                               | IG                  | 14  | 13  |          | V                              | I, D, P                         | Yes                   | F                    | Learning, transfer    | 0.88     |
| Wilcox, B. (2004)                             | U                               | RM                  | 92  | 92  |          | V                              | I, P                            |                       | F                    | Learning              | 0.89     |
| Zwikaël, O., Shtub, A., & Chih, Y. (2015)     | P                               | RM                  | 42  | 42  |          | V                              | I, P                            |                       | V                    | Learning              | 0.32     |

<sup>a</sup> Publication is published (P) or unpublished (U).

<sup>b</sup> Design coded as repeated measure (RM) and/or independent groups (IG).

<sup>c</sup> Attendance policy coded as voluntary (V) or mandatory (M).

<sup>d</sup> Delivery method coded as information (I), demonstration (D), and/or practice (P), or a combination.

<sup>e</sup> Feedback implemented (yes).

<sup>f</sup> Setting coded as face-to-face (F) and/or virtual (V).

Table 2

Meta-analytic results: overall.

| Variable                                 | $k$ | $N$  | $d$  | Corrected $d$ | SD   | %Var | 95% CI |      |
|------------------------------------------|-----|------|------|---------------|------|------|--------|------|
|                                          |     |      |      |               |      |      | LL     | UL   |
| Overall                                  | 73  | 5734 | 0.42 | 0.46          | 0.55 | 3.21 | 0.34   | 0.58 |
| Published                                | 33  | 2590 | 0.38 | 0.41          | 0.32 | 9.59 | 0.30   | 0.51 |
| Unpublished                              | 40  | 3144 | 0.47 | 0.51          | 0.71 | 1.75 | 0.30   | 0.72 |
| Study design                             |     |      |      |               |      |      |        |      |
| Repeated measures                        | 53  | 3172 | 0.39 | 0.42          | 0.48 | 5.67 | 0.29   | 0.54 |
| Independent groups                       | 6   | 922  | 0.85 | 0.92          | 0.94 | 0.07 | 0.22   | 1.63 |
| Independent groups and repeated measures | 14  | 1640 | 0.43 | 0.47          | 0.52 | 2.37 | 0.21   | 0.72 |

Note.  $k$  = number of independent samples;  $N$  = sample size;  $d$  = repeated measures Cohen's  $d$ ; SD = corrected standard deviation; %Var = percent of variance accounted for by sampling error variance; CI = confidence interval; LL = lower limit; UL = upper limit.

online programs when considering both learning ( $t(54) = 0.30$ ,  $p > .05$ ) and transfer ( $t(13) = 1.79$ ,  $p > .05$ ) outcomes.

#### Answers to research questions

Considering RQ1, relevant to both learning and transfer criteria, we specified whether the outcome was cognitive, affective, or skill-based using Kraiger et al.'s (1993) classification schemes. Table 5 lists the frequency and percentages of samples that reported each category of outcome. The majority of our samples measured skill-based outcomes ( $k = 31$ , 43.1%), followed by affective outcomes ( $k = 15$ , 20.8%), and the fewest samples solely measured cognitive outcomes ( $k = 5$ , 6.9%). There were 21 (29.2%) samples that measured a combination of outcome types, as depicted in Table 5.

Regarding how the outcomes were evaluated (RQ2), 59 (80.8%) samples used self-report methods. Only one (1.4%) sample used peer-ratings; four (5.5%) samples used observers and three (4.1%) used objective reports. There were six (8.2%) samples that used multiple methods: two used self-report and observer ratings, two that used self-report and objective ratings, one used self-report and peer ratings, and

Table 3

Meta-analytic results: learning.

| Variable                                 | $k$ | $N$  | $d$  | Corrected $d$ | SD   | %Var  | 95% CI |      |
|------------------------------------------|-----|------|------|---------------|------|-------|--------|------|
|                                          |     |      |      |               |      |       | LL     | UL   |
| Overall learning                         | 62  | 5016 | 0.47 | 0.50          | 0.56 | 2.63  | 0.37   | 0.63 |
| Attendance                               |     |      |      |               |      |       |        |      |
| Voluntary                                | 39  | 3204 | 0.56 | 0.60          | 0.63 | 1.58  | 0.41   | 0.79 |
| Involuntary                              | 8   | 1027 | 0.21 | 0.23          | 0.17 | 22.24 | 0.10   | 0.35 |
| Spacing effect                           |     |      |      |               |      |       |        |      |
| Yes                                      | 43  | 3777 | 0.49 | 0.52          | 0.58 | 2.14  | 0.36   | 0.96 |
| No                                       | 11  | 499  | 0.31 | 0.32          | 0.25 | 24.49 | 0.16   | 0.49 |
| Delivery method                          |     |      |      |               |      |       |        |      |
| Information                              | 9   | 462  | 0.70 | 0.75          | 0.99 | 0.58  | 0.13   | 1.36 |
| Demonstration                            | 1   | 15   | 0.11 | 0.12          | 0    | -     | 0.12   | 0.12 |
| Practice                                 | 5   | 435  | 0.46 | 0.49          | 0.37 | 5.45  | 0.17   | 0.81 |
| Information and demonstration            | 1   | 19   | 0.09 | 0.09          | 0    | -     | 0.09   | 0.09 |
| Information and practice                 | 27  | 2232 | 0.49 | 0.52          | 0.35 | 6.11  | 0.39   | 0.65 |
| Demonstration and practice               | 1   | 73   | 0.24 | 0.26          | 0    | -     | 0.26   | 0.26 |
| Information, demonstration, and practice | 12  | 1130 | 0.70 | 0.74          | 0.91 | 0.38  | 0.25   | 1.23 |
| Feedback                                 |     |      |      |               |      |       |        |      |
| Yes                                      | 14  | 1046 | 0.69 | 0.74          | 0.80 | 0.64  | 0.34   | 1.14 |
| No                                       | 48  | 3970 | 0.42 | 0.44          | 0.46 | 4.24  | 0.32   | 0.57 |
| Setting                                  |     |      |      |               |      |       |        |      |
| Virtual                                  | 8   | 793  | 0.52 | 0.55          | 0.51 | 2.30  | 0.22   | 0.89 |
| Face to face                             | 48  | 3682 | 0.46 | 0.49          | 0.62 | 2.32  | 0.32   | 0.66 |
| Mixed                                    | 3   | 370  | 0.55 | 0.58          | 0.26 | 6.41  | 0.30   | 0.86 |

Note.  $k$  = number of independent samples;  $N$  = sample size;  $d$  = repeated measures Cohen's  $d$ ; SD = corrected standard deviation; %Var = percent of variance accounted for by sampling error variance; CI = confidence interval; LL = lower limit; UL = upper limit.

one used self-report, objective, and observer ratings.

Observing RQ3, there were 57 (78%) samples that specified collecting outcome data immediately after training, eight (11%) that gathered their outcome data after a delay, and eight (11%) that were unclear. Of the delayed outcomes, they ranged from two weeks to a one year delay, with an average of 16.72 days.

RQ4 aimed to uncover the instructional strategies used in LD programs. Within the three main instructional strategies, there was a wide



**Table 4**  
Meta-analytic results: transfer.

| Variable                                 | <i>k</i> | <i>N</i> | <i>d</i> | Corrected <i>d</i> | SD   | %Var | 95% CI |       |
|------------------------------------------|----------|----------|----------|--------------------|------|------|--------|-------|
|                                          |          |          |          |                    |      |      | LL     | UL    |
| Overall transfer                         | 15       | 1150     | 0.32     | 0.36               | 0.44 | 6.59 | 0.16   | 0.56  |
| Attendance                               |          |          |          |                    |      |      |        |       |
| Voluntary                                | 12       | 1081     | 0.33     | 0.37               | 0.46 | 5.20 | 0.14   | 0.61  |
| Involuntary                              | 2        | 57       | 0.16     | 0.19               | 0    | 100  | 0.16   | 0.21  |
| Spacing effect                           |          |          |          |                    |      |      |        |       |
| Yes                                      | 11       | 875      | 0.38     | 0.44               | 0.48 | 5.00 | 0.18   | 0.69  |
| No                                       | 1        | 27       | 0.81     | 0.94               | 0    | –    | 0.94   | 0.94  |
| Delivery method                          |          |          |          |                    |      |      |        |       |
| Information                              | 3        | 101      | 0.19     | 0.21               | 0    | 100  | 0.15   | 0.28  |
| Demonstration                            | –        | –        | –        | –                  | –    | –    | –      | –     |
| Practice                                 | 2        | 434      | 0.40     | 0.46               | 0.35 | 3.33 | 0.03   | 0.90  |
| Information and demonstration            | –        | –        | –        | –                  | –    | –    | –      | –     |
| Information and practice                 | 1        | 80       | –0.61    | 0.70               | 0    | –    | –0.70  | –0.70 |
| Demonstration and practice               | –        | –        | –        | –                  | –    | –    | –      | –     |
| Information, demonstration, and practice | 4        | 219      | 0.56     | 0.64               | 0.60 | 3.05 | 0.12   | 1.17  |
| Feedback                                 |          |          |          |                    |      |      |        |       |
| Yes                                      | 5        | 168      | 0.55     | 0.63               | 0.73 | 3.48 | 0.05   | 1.21  |
| No                                       | 10       | 982      | 0.28     | 0.32               | 0.35 | 8.38 | 0.11   | 0.52  |
| Setting                                  |          |          |          |                    |      |      |        |       |
| Virtual                                  | 1        | 192      | 0.05     | 0.06               | 0    | –    | 0.06   | 0.06  |
| Face to face                             | 6        | 356      | 0.47     | 0.54               | 0.70 | 2.67 | 0.03   | 1.04  |
| Mixed                                    | 1        | 242      | 0.68     | 0.79               | 0    | –    | 0.79   | 0.79  |

Note. *k* = number of independent samples; *N* = sample size; *d* = repeated measures Cohen's *d*; SD = corrected standard deviation; %Var = percent of variance accounted for by sampling error variance; CI = confidence interval; LL = lower limit; UL = upper limit.

**Table 5**  
Types of learning outcomes evaluated by samples.

|                                 | Frequency of samples |
|---------------------------------|----------------------|
| Cognitive                       | 5 (6.9%)             |
| Affective                       | 15 (20.8%)           |
| Skill                           | 31 (43.1%)           |
| Cognitive and affective         | 9 (12.5%)            |
| Cognitive and skill             | 0 (0%)               |
| Affective and skill             | 10 (13.9%)           |
| Cognitive, affective, and skill | 2 (2.8%)             |

Note. *k* = 72 samples because one sample did not fit Kraiger, Ford, and Salas' (1993) classification scheme.

**Table 6**  
Frequency of instructional strategies used in LD programs.

| Strategy                           | Frequency of samples |
|------------------------------------|----------------------|
| Information-based                  |                      |
| Lecture                            | 44 (69%)             |
| Discussion                         | 40 (63%)             |
| Reading/text-based materials       | 24 (38%)             |
| Demonstration-based                |                      |
| Videos/films/audio                 | 12 (19%)             |
| Practice-based                     |                      |
| Project-based work/exercises       | 30 (47%)             |
| Case studies                       | 14 (22%)             |
| Self-reflection                    | 22 (34%)             |
| Roleplay                           | 15 (23%)             |
| Setting goals                      | 13 (20%)             |
| Coaching/mentoring                 | 9 (14%)              |
| Problem identification and solving | 8 (13%)              |
| Games                              | 4 (6%)               |
| Technology-based simulations       | 5 (8%)               |
| Outdoor course (e.g., rope course) | 2 (3%)               |
| Behavioral modeling                | 2 (3%)               |
| Action learning                    | 2 (3%)               |
| Leader match                       | 1 (2%)               |

Note. *k* = 64 because 9 samples did not specify instructional strategies used.

variety of specific approaches used across samples. The number of instructional strategies used ranged from one to ten, averaging four per program. Moreover, nine samples did not specify the approaches used. Given the possibility of many combinations of methods, Table 6 lists strategies used in the samples.<sup>2</sup>

## Discussion

The majority of universities offer LD programs to students, thereby potentially providing them the opportunity to better prepare for the future. Given this demonstrable investment, we aimed to identify whether LD programs for students were effective, to understand under what training circumstances they were optimally so, and how higher education LD studies were being evaluated. In doing so, we uncovered both research and practical implications. The practical implications of our findings aim to help training developers recognize what to include in LD programs in higher education. Our research implications build theory on LD and provide recommendations to strengthen future meta-analyses.

### Summary of meta-analytic findings

The current meta-analysis complements previous work on LD program effectiveness (Avolio et al., 2009; Burke & Day, 1986; Collins & Holton, 2004; Lacerenza et al., 2017; Powell & Yalcin, 2010). Although comprehensive from a workforce perspective, these existing meta-analyses excluded student samples from their meta-analyses, leaving the effectiveness of LD programs in educational contexts unknown. For example: Avolio et al. (2009) specified type of organization as either profit, not for profit, or military; Burke and Day (1986) solely analyzed managerial/supervisory personnel; Collins and Holton (2004) only used employee samples; and Powell and Yalcin's (2010) meta-analysis focused on private sector organizations. We argue that the effectiveness of LD programs in student populations is an important, separate examination from employee populations for several reasons: (1) student participants have less, or even no, previous leadership experience; (2)

<sup>2</sup> Note that multiple methods could have been used in a single sample.

the content of student LD programs may be more general because they are not job-specific; and (3) the goals of higher education LD programs are likely different from others (e.g., the goal in a higher education program could be to become a better leader and/or attain a leadership position, whereas the goals in organizational LD programs might be to be a better leader, increase follower performance, increase follower job satisfaction, lower follower turnover, etc.). Therefore, the current investigation tests moderators of LD programs to assess the conditions in which higher education LD programs are most effective.

Regarding the effectiveness of LD programs in higher education, our meta-analytic findings suggest that, in our samples, substantial learning occurred (corrected  $d = 0.50$  translating to a 19% increase [percent increase is equal to Cohen's  $U^3 - 50$ ; Cohen, 1988]), and transfer also occurred, but to a lesser extent (corrected  $d = 0.36$  translating to a 14% increase). This supports the notion that these LD programs improve the extent to which students *can* become better leaders (i.e., by exhibiting changes in learning) more than they improve the extent to which they *will* be better leaders (i.e., by transferring the learned behavior to the workplace). Educators may be paying too much attention to learning outcomes and neglecting to effectively teach students how to transfer their newfound skills. This lack of transfer is not uncommon and referred to throughout the science of training as *the transfer problem* (e.g., Ford & Weissbein, 1997). The greater improvement in learning compared to transfer could potentially be due to teachers creating programs that result in the acquisition of knowledge and skills, but not transfer – which is a separate task entirely. Alternatively, current approaches to measuring transfer within this context may not fully capture the extent to which transfer has occurred. There may be constraints associated with measuring student transfer compared to employee transfer. For example, gathering accurate transfer data after a class has ended and students are no longer in contact with the instructor may be more difficult compared to gathering transfer data from employees that continue to work with the organization that has provided training. Thus, the importance of learning itself should not be disregarded as learning is a necessary step toward transfer (Huang, Blume, Ford, & Baldwin, 2015; Hughes et al., 2016).

We found mixed support regarding moderators of LD program effectiveness for students. Results suggest that voluntary programs are more effective than involuntary programs in fostering learning outcomes, thus supporting training theory which highlights the importance of trainee motivation in facilitating outcomes (Baldwin & Ford, 1988). This could be due to attendees of voluntary programs having more intrinsic motivation to change attitudes and behaviors because they self-select into the program. However, the issue of self-selection in a voluntary program also has a strong chance of leading to inflation in self-report outcomes. We discuss this in greater detail in the upcoming section on recommendations for conducting a LD program evaluation study.

Although results trended in the hypothesized direction, we did not find that programs incorporating multiple delivery methods were significantly more effective than those based on a single delivery method. In regard to LD programs in a more general context (i.e., with employees as trainees), Lacerenza et al. (2017) found the relationship between programs and learning outcomes to be fairly stable across moderator categories; the current results mirror these findings. We encourage LD program developers to continue moving in the direction of using a combination of methods. Though we do not have clear findings, theory and previous research have demonstrated support for this approach (Salas & Cannon-Bowers, 2001). To ensure that the selected methods are actually effective in training leadership skills, developers should evaluate the program and adjust accordingly based on the results.

Our hypothesis in favor of using feedback also showed results trending in the hypothesized direction. Though findings did not demonstrate significant relationships, it is possible that some of the samples, which did not report whether or not they provided feedback,

did indeed provide trainees with feedback but neglected to document it. Similarly, many articles that reported the use of feedback did not elaborate on how the feedback was delivered. For example, feedback can be delivered by a single source or it can be provided from multiple individuals who know the trainee from different perspectives for a more holistic view (e.g., trainers, classmates, professors). The latter approach is known as 360-degree feedback (Goldsmith, Lyons, & Freas, 2000). The trainee receives a report with a summary of everyone's ratings and some reports also provide the individual with the average rating for other trainees so that they can better understand what areas need more improvement. Future research should investigate whether 360-degree feedback is more effective than single source feedback and who would be the best source to give comments and criticism.

Interestingly, we did not find a difference in outcomes between online and face-to-face programs. However, previous researchers have suggested that face-to-face training is potentially more impactful than self-administered facilitation because facilitators can make real-time adjustments to fit the needs of the participants (Magerko et al., 2005). Although this should be further investigated, it is promising that we did not find differences, as the future of training is moving toward a more virtual world. If virtual programs can prove to be as effective as face-to-face programs, the benefits of this scalability can enable training to reach many more students. Furthermore, advances in technology can allow online programs to more closely mimic real face-to-face interactions and incorporate additional real-time adjustments and feedback to participants.

#### Summary of frequency analysis

Our primary goal was to identify whether LD programs are beneficial for students in higher education. Our secondary goal was to move beyond this initial aim by taking a deeper look into the prevalence of certain features of training and the evaluation process; this uncovers additional detail that would have been otherwise ignored in a solely meta-analytic approach. The meta-analysis highlights *what works*; the review reveals *what is used* in practice in more specific detail. For example, our meta-analysis compares the primary, scientifically-based delivery methods (i.e., information-based, demonstration-based, practice-based), whereas the review reveals the exact and exemplary types of practice methods that are being used in these programs.

Promisingly, our meta-analysis found support that LD programs lead to learning. Our review showed that in regard to Kraiger et al.'s (1993) classification scheme of learning outcomes, most programs focus on skill-based learning. This includes communicating, persuading others, setting goals, and problem solving (Bruck, 1997; Kruml & Yockey, 2011; Rohs, 1999). Intuitively, skill-based outcomes are important for training because programs are designed to change behaviors. However, although we cannot judge what type of outcome is most important to evaluate, future research can test cognitive and affective outcomes as well, because affect and cognitions are also important for shaping behaviors (Kahle & Berman, 1979).

Our frequency evaluation of training design, delivery, and implementation characteristics revealed that in practice, LD programs generally use approaches that are convenient and inexpensive rather than rooted in science. We noted this in two main areas: instructional strategies and evaluation. First, we note that lecture and discussion were the predominant instructional strategies used (see Table 6 for specific strategies that were used). We do not discredit the value of these strategies; rather, we encourage researchers and training developers to explore approaches that incorporate more practice (e.g., role-play, goal setting, games). In doing so, it will be possible to determine exactly which strategies are the most effective and if results mirror training theory and current evidence. Potentially, using more practice-based methods like reflective activities and roleplay could convince students that they can and should incorporate their skills in real scenarios. Also, because many students have yet to hold a professional

**Table 7**

Endogeneity concerns for higher education leadership development program evaluation and mitigation strategies.

| Endogeneity concern                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Exemplar study combatting concern                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Main concerns</p> <p>Sample suffers from self-selection or is non-representative</p> <p>Dependent variables are gathered from a single-method self-reporting</p> <p>Omitting selection by comparing a treatment group to a non-equivalent group</p> <p>Other concerns</p> <p>Omitting a regressor, that is, failing to include important control variables when testing the predictive validity of dispositional or behavioral variables</p> <p>Omitting fixed effects</p> <p>Not using cluster-robust standard errors in panel data (i.e., multilevel hierarchical or longitudinal)</p> <p>Not correlating disturbances of potentially endogenous regressors in mediation models</p> | <p>- Although <a href="#">Sampl et al. (2017)</a> recruited undergraduate students via e-mail, making it a voluntary training program, they conducted a pre-posttest design with a training group versus a control group who later received the training. They used a longitudinal randomized controlled study design by offering a voluntary program via e-mail that was split into two groups: an intervention group or a waiting list group. "Students had the opportunity to sign up for the study by completing a questionnaire, which coexisted as the first measurement point (T1). ...After the first assessment point at T1, participants were randomly assigned to either a training group or a control group (waiting list). During a fixed period of 10 weeks, participants of the [training] group received the training, whereas participants of the control group received no training. The control group was informed that groups were divided due to the high attendance and received the training at a later point when the study was finished. After the completion of the training or waiting period, all participants were invited again to participate in a second assessment (T2) by completing the same questionnaires as used in T1. In order to reflect as closely as possible the critical variables, T2 took place during the examination period at the end of the summer term" (p. 1397).</p> <p>- In a military college setting, students acting as platoon leaders were rated by their superior officer. The raters were unaware of whether the cadets completed a leadership training program (<a href="#">Fiedler &amp; Mahar, 1979</a>).</p> <p>- <a href="#">Antonakis et al. (2011)</a> videotaped MBA students giving a speech before and 6 weeks after leadership training and had independent assessors rate the speeches for leader charisma.</p> <p>- <a href="#">Facca-Miess (2015)</a> compared three groups of business students: (a) students enrolled only in a capstone marketing course (CC) which incorporated leadership training as part of the course, (b) students enrolled only in a market research and analysis course (MR), which did not discuss leadership, and (c) students enrolled simultaneously in MR and CC.</p> <p>- <a href="#">Sampl, Maran, and Furtner (2017)</a> included effects of time and group and pre-intervention group differences. <a href="#">Antonakis et al. (2011)</a> used speech performance ratings for their outcome variable, so they controlled for length of speech and measured communication skills to control for other learning effects that were not taught.</p> <p>- To test whether trainees improved charismatic behaviors, participants delivered a speech before and 6 weeks after training, using the same content and wearing the same attire. "The advantage of using this type of within-subjects design is to determine whether variation in charisma predicted subjective ratings of leader prototypicality and other outcomes beyond participant constant (i.e., fixed) effects" (<a href="#">Antonakis et al., 2011</a>, p. 384).</p> <p>- <a href="#">Antonakis et al. (2011)</a> used cluster-robust standard errors at the rater level because each rater rated four trainee leaders.</p> <p>- See <a href="#">Antonakis et al. (2011, Study 2)</a> for the equations with correlated disturbances to test endogenous regressors.</p> |

Note. The endogeneity concerns are from [Antonakis, Bendahan, Jacquart, and Lalive \(2010\)](#).

leadership position, LD programs can aim to provide students with these experiences so that they have an opportunity to practice their skills in a real-world setting. In all, LD does not stop in the classroom, so neither should LD programming. Second, regarding evaluation, the majority of our samples only used self-report ratings and only collected data immediately after training. We elaborate on the boundaries of this evaluation approach and provide recommendations for researchers conducting LD program evaluation studies later in the paper.

#### Roadmap for future research

Although the current meta-analysis found LD programs to be effective in increasing learning and transfer, a majority of the constituent samples included in the meta-analysis had endogeneity concerns, pointing to a larger endogeneity bias in the LD literature. However, there are a handful of exemplar studies that combat these issues and demonstrate how a LD program evaluation study should be conducted to mitigate these potential issues, which we would like to highlight. In this section, we describe endogeneity concerns, offer recommendations regarding how to conduct a LD program evaluation study, and provide study examples, shown in [Table 7](#). Then, we offer best practices for future meta-analyses in this area; we suggest a set of minimum inclusion criteria for LD program research upon which policy and program decisions can be based. Finally, we conclude with the limitations of the current meta-analysis and additional future directions.

We believe this meta-analysis can be used as a starting point for discussing key endogeneity issues in LD program studies, as well as

highlighting how to resolve these concerns in future research. [Antonakis, Bendahan, Jacquart, and Lalive \(2010\)](#) outline a number of threats to causal inference, three of which are substantial concerns in our meta-analysis: (1) omitted selection by comparing a treatment group to a non-equivalent group (i.e., not using random assignment), (2) self-selection within voluntary programs, and (3) single-method self-reporting. Potential compounding bias can also be caused by multiple endogeneity concerns in a single sample. In the current meta-analysis, out of 57 samples that reported adequate information, 36 had all three issues (63.2%), 14 had two of the issues (24.6%), and 7 (12.3%) had one issue. These three concerns are by no means an exhaustive set of causes of endogeneity bias, and the magnitude and direction of such bias is uninterpretable; therefore, we did not analyze any further. Below, we address how researchers can avoid these issues when conducting a LD evaluation study.

First and foremost, the gold standard is to use and compare a randomly assigned and representative student sample in the LD program to an equivalent group that serves as a control ([Antonakis et al., 2010](#)). For example, [Facca-Miess \(2015\)](#) compared business students in three groups: (a) students enrolled only in a capstone marketing course (CC) that incorporated leadership training as part of the course, (b) students enrolled only in a market research and analysis course (MR), which did not discuss leadership, and (c) students enrolled simultaneously in MR and CC. Similarly, [Heft and Deni \(1984\)](#) used a sample from a more general training program and randomly assigned the trainees into two sections without disclosing condition. Section I completed the leadership portion of the training, and Section II completed the pre- and post-

test prior to receiving the leadership training. In both these studies, students' random assignment to these groups established an experimental design, wherein the control group acted as a baseline to isolate the effects of the LD intervention.

In cases where omitting selection is unavoidable, the treatment group can be compared to a similar control group; in these cases, the process should be explicitly modeled to estimate the counterfactual correctly. Antonakis et al. (2010) detail multiple method approaches that allow researchers to make stronger causal claims when random assignment is not achievable. For example, they point to the Heckman type two-step selection model (Heckman, 1979) to predict the variance from the error term due to selection, which can then be removed to correctly estimate the treatment term.

A second main concern in educational settings is that students typically self-select to be a part of the LD program, as opposed to training programs that many work organizations require of their employees. Although volunteering to participate in a LD program can be related to higher intrinsic motivation (Hicks & Klimoski, 1987), it may also inflate self-report data because the trainees enter the program with a bias in favor of the program. To avoid this issue, evaluation studies can use Sampl, Maran, and Furtner's (2017) approach of implementing a randomized controlled design. Sampl et al. (2017) offered the training program via e-mail to students and then split the interested students into two subgroups: a training group and a waitlist group, which served as the control group. Both groups completed a pretest as part of the intake form and a post-test after the training was facilitated to the first group. The waitlist-control group was then given the training after this initial period. During this process, it is ideal to have substantial proximal separation, such that the groups are unaware of each other (Athanasopoulou & Dopson, 2018). This waitlist-control alternative not only establishes a control group, but also allows educational administrators to provide all students with the opportunity to gain valuable LD experiences. Notably, self-selection is an inherent part of the vast majority of LD programs in higher education – nearly all students self-select into LD programs (even self-selecting into a degree program that requires an LD course is still self-selection) and thus, self-selection is less of an endogeneity “threat” in the educational context and instead, it may be important to use the estimates we provide in the current meta-analysis as evidence of the effectiveness of these programs within active self-selection contexts.

Third, we note that the majority of the samples only evaluated learning outcomes using self-report methods. Self-report is typically saturated with self-serving and social desirability biases (Fisher, 1993). To help mediate these biases, researchers should take care in using high-quality instruments. One strategy is to use psychological separation of content areas when designing the instrument (Athanasopoulou & Dopson, 2018; Podsakoff, MacKenzie, & Podsakoff, 2012). By adding items to the survey that are unrelated to the LD program, it makes it less apparent to the participants that it is LD program-specific. Another technique is to minimize concerns over the purpose of the assessment, in turn potentially reducing social desirability biases when completing the survey. For example, in Heft and Deni's (1984) sample, the facilitator told the students that the questionnaires were “given to me by the School of Business Administration” so that students would not think they were related to the course.

Additionally, researchers should consider mixed methods to generate more insightful findings and enhance the robustness of the study design (Athanasopoulou & Dopson, 2018). Researchers should leverage multiple sources of data when evaluating LD program impact in order to develop a more holistic view (Salas et al., 2015). For example, trainees can be evaluated by the trainers, peers, and themselves. In their military student sample, Fiedler and Mahar (1979) used a composite rating from cadet superiors, cadet peers, and supervising officers to assess leadership performance (i.e., transfer criterion). In other school settings, the composite score can combine ratings from the facilitator, course peers, and even supervisors from extracurricular activities with

which the student is involved (e.g., sports team, volunteer position, internship). This suggestion aligns with research demonstrating that others' ratings (rather than self-report) can be more valid predictors of outcomes such as competence and performance (Atkins & Wood, 2002; Greguras & Robie, 1998). Triangulating data sources can thus powerfully augment the accuracy of LD program evaluation.

As opposed to solely relying on trainees to self-report their perceived learning, outcomes should also be measured using more objective approaches. For example, participants can be given a declarative knowledge test as a measure of learning. Researchers may also consider carefully-designed observational methods, which can provide more useful insight and robust measurement. Antonakis, Fenley, and Liechti (2011) serve as an exemplar study in this regard. They asked MBA students to give a speech before and six weeks after leadership training, using independent assessors to rate each speech for markers of leader charisma. To help control for a number of factors, they required that participants provide the same content and wear the same attire at both sessions. This approach helped “determine whether variation in charisma predicted subjective ratings of leader prototypicality and other outcomes beyond participant constant (i.e., fixed) effects” (Antonakis et al., 2011, p. 384). They also controlled for length of speech and measured communication skills to control for other learning effects that were not taught. As Antonakis et al. (2011) demonstrated, LD program evaluations should account for fixed effects and include important control variables when testing the predictive validity of behavioral variables. These measures can also help alleviate other endogeneity concerns in this area of research (as outlined in Table 7).

Furthermore, future studies are needed that include and evaluate other Kirkpatrick (1959) evaluation criteria, namely, reactions, transfer, and results. For example, LD programs completed for course credit likely collected student evaluations, which could easily be used to measure reactions. Evaluating programs holistically would enable more accurate investigations involving the effect of training design, delivery, and implementation characteristics on all outcomes. Additionally, evaluating outcomes after time has passed can determine whether the learned material has been retained and whether the effectiveness of LD programs degrades over time. Temporal delays in evaluation can also provide the researcher with objective data on performance (e.g., transfer) that would not otherwise be obtainable immediately post-training (e.g., students often do not have a performance episode to display transfer until well after the training is over).

Finally, a simple yet imperative practice in conducting LD program evaluation studies is to include as much detail as possible when reporting program design and delivery. This helps other training developers model new programs after effective LD programs. Not only does complete reporting help administrators and trainers use best practices in the field, but it also supports future scholars as they investigate research in this area. For example, a meta-analysis can only make assumptions based on the details provided in each article, in which case there may be undeterminable and unaccounted-for information. When documenting any design or delivery method used in the study, we suggest acknowledging *who, what, when, where, and how* each process was accomplished (e.g., explicitly stating that feedback was written down by the instructor and other peers during a practice activity and given to trainees immediately afterward). In order for the science of LD to grow, researchers must ensure that they comprehensively document necessary program information.

Ultimately, in order for the science of LD to grow, future research on LD programs should adhere to the following:

- Use a comparison group, especially for voluntary programs
- Use a comparison group when outcomes are only self-report
- Demonstrate how the comparison group is equivalent to the treatment group
- Include control variables in design
- Include potential confounding variables in analysis



- Ensure that any self-reported learning outcome is difficult to fake.

We hope this list enhances the quality of next-generation LD research, and can subsequently be used as inclusion criteria in a next-generation LD meta-analysis, upon which policy and program decisions can be based.

#### Limitations and additional future directions

These recommendations draw attention to limitations of the present effort. The first limitation is the lack of details available from the samples included within our study. As previously stated, researchers should carefully detail all aspects of their program such that meta-analyses can investigate as much detail as is provided in the original samples. For example, regarding spacing of sessions, researchers should report more information so we can examine not just whether spacing is important but what spacing (e.g., length of spacing) is best to maximize effectiveness. Another limitation was the small sample size that prevented some of our hypotheses from being tested. Additionally, though we did not find publication bias, it is possible that researchers have not documented unsuccessful LD programs, therefore limiting the amount of accessible data on ineffective programs (however, a large proportion of our samples were unpublished dissertations). Finally, although we consider the discussion of endogeneity concerns as a contribution to the literature, the issue does lend itself as a limitation in our ability to make causal inferences from our meta-analysis. It should also be noted that although the endogeneity-plagued results may be similar to those of samples with a clear causal design, this does not mean that the endogeneity-plagued results should be used to inform policy. Therefore, we encourage caution when interpreting the results, but hope that this study can serve as a guide for future research on the topic.

Given the limited availability of evaluation studies on LD programs in higher education, our study was not able to assess several moderators that would be helpful to investigate in the future. First, it seems that only brief LD programs have been empirically evaluated. There could be degree programs (i.e., multiple courses) offered to students that would be beneficial to evaluate. Also, future research should continue to evaluate the effectiveness of both modes of training (i.e., face-to-face and online education) and consider the effectiveness of blended learning, which combines both face-to-face and online education (Driscoll, 2002). As technology advances, there may be interesting shifts in modes of training and how participants engage, given that the new generation has been found to prefer technology more than previous generations (Frاند, 2000).

#### Conclusion

Our results suggest that LD programs in higher education work in the studies examined—both learning and transfer increased as a result of these LD programs. However, the samples identified within our meta-analysis also pointed to a concern that appears to be common within this area of literature—endogeneity bias. To this end, we offer a roadmap for future evaluation studies to more effectively address endogeneity concerns. In practice, it appears that LD programs that are being used in education have been following guidelines from scientific research (e.g., the spacing principle, using multiple delivery methods), but there is still room for improvement (e.g., providing feedback, measuring outcomes using a triangulation approach to measurement). Other design, delivery, and implementation elements need further research specific to student leadership development. We hope that our findings can guide the future development of LD programs and their evaluation design.

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