Developing Students as Leaders Through Professional Coaching: A Preliminary Report on Developmental Benefits

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Executive Summary

The Ann and John Doerr Institute for New Leaders is now finishing its third year of operations at Rice University. A foundational principle of the Doerr Institute is that every leader development initiative is carefully and rigorously evaluated by an in-house metrics team, using valid and reliable measures and diverse methods (e.g., self-report, observer reports, attitudes, behaviors). Preliminary impact evidence has been very positive from our earliest program, which involves providing a professional leader development coach to every undergraduate who wants one, free of charge. So far, evidence shows substantial growth in leader identity, which is fundamental to students’ likelihood of taking on new leadership roles and challenges. Self-reported changes in leader identity have been independently corroborated by coaches as well as acquaintances (friends, roommates, teammates). Secondary benefits of one-on-one coaching include enhanced sense of purpose/meaning and decreased feelings of psychological distress. Most recently, a behavioral index of emergent leadership has been developed and validated by the Doerr Institute, which will allow for long-term evaluation of behavioral trajectory changes among students who work with the Institute on their leadership competencies.

Acknowledgments

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Universities have long espoused the goal of developing the next generation of leaders as central to their educational missions. Clearly defining what such a developmental process might entail, however, remains an ongoing challenge for universities, and measuring the extent to which they are succeeding in reaching this noble goal is both difficult and rare. Without a firm commitment to honest measurement, no institution can hope to make consistent progress in developing students as leaders. Indeed, even if they managed to make progress, how would they know they had been successful? Evaluating successes and failures is the only way to discern which programs are yielding the desired results, and which programs should be abandoned.

These challenges of defining what success looks like and measuring the benefits of leader development are not limited to higher ed. The world beyond the ivory tower fairs only a little better when it comes to determining whether leader development programs (when they exist) are worth the hefty price paid by many corporations.\(^1\) Claims about benefits are commonplace, but the quality of and evidence supporting many leader development initiatives vary widely across companies and corporations.\(^2\)

The Doerr Institute for New Leaders began in 2015 with a strategic gift from Ann and John Doerr to Rice University. This gift was given to elevate the leadership capacity of Rice students across the entire university, and by doing so, to inspire other universities to develop students as leaders in a similar, evidence-based fashion. Since its inception, the Doerr Institute has placed the measurement of outcomes and empirical evaluation of its efforts at the heart of everything it does. If a program fails to develop students’ capacity to lead in some measurable way, the Doerr Institute will not continue to fund that program (this is one of the reasons that the Institute avoids “leadership speakers,” which take enormous resources and rarely, if ever, produce any measurable changes in anyone).

From the very start, the Doerr Institute has used professional leadership coaching as a key component of its developmental portfolio. Any undergraduate at Rice who wants to develop his or her leadership abilities can receive a professional, certified coach for a semester. These coaches are experienced professionals who typically work with executives in the business community and other leaders, and they receive ongoing, specialized training from the Doerr Institute on working with college students and on the Rice culture. Students do not have to compete to receive a coach, and they do not have to pay for this service. No academic credit is offered for participating in this or any other Doerr Institute program. Students participate because they want to grow, and they are coached within the scope of their own roles, activities, values, and passions.

All coaching through the Doerr Institute begins with an assessment of a student’s level of emotional intelligence, using a well-validated tool called the EQi-2.0. Students debrief this assessment with their coaches and then engage in a standardized process of self-reflection on what they think leadership means and on their own ideals and values in the leadership domain. Students reflect on and articulate to their coach what they believe
the best version of themselves as a leader might look like, and then they create a focused plan for how to grow toward this ideal. Examples of the most common leadership goals that students choose to work on are shown in the graph below.

<table>
<thead>
<tr>
<th>% of Respondents with Each Goal</th>
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<tbody>
<tr>
<td>Self-Confidence</td>
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<td>--------------------</td>
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<td>30%</td>
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To evaluate whether this process is effective in enhancing students’ capacity to lead, a rigorous evaluation process has been created by the Doerr Institute:

1. At the most basic level, the Institute gathers data from students on every interaction between a student and a coach. Students report on the perceived value of each coaching session as well as on their sense of their own growth and progress toward their goals, among other things.

2. Beyond this type of evaluative feedback, though, students also complete a 9-item leader identity measure (see Appendix) both before and after a semester-long coaching engagement, which typically spans 4 to 5, hour-long sessions. This pre-post assessment allows the Institute to determine whether any growth in leader identity has occurred over time across all students engaged in the coaching process. In our framework, leader identity comprises self-categorization as a leader, leadership self-efficacy, authenticity as a leader, and self-awareness of leadership strengths and weaknesses, and research shows that such an identity is a fundamental element of motivation and skill development as a leader. Coaches also provide their own observations and ratings of their student clients, reporting on their levels of engagement throughout the coaching process and their perceptions of student growth (more on this to follow).
3. Data from a campus-wide survey of all Rice students, which contains these same leader identity items (among many others), serve as a key source of comparison for these pre-post leader identity scores. Results from the Fall of 2017 are shown in the figure below, which compares leader identity scores for students who have never been coached to those of coached students prior to the start of a coaching engagement, mid-coaching, and post coaching. As can be seen from this figure, students who seek leadership coaching are almost indistinguishable from the rest of the student body prior to coaching (this lack of difference is also seen on other indices, such as personality, major, and basic demographic variables). By the middle of the semester, however, coached students exhibit an increase in their leader identity scores that is further increased by the end of the coaching engagement. This incremental growth is statistically significant, substantial in effect size (Cohen’s d > 1.3), and has been replicated over multiple semesters.

![Leader Identity Chart]

*Note: Scores on the Leader Identity Scale range from 1 to 5 and reflect the average response across 9 items.*

It is also noteworthy that leader identity scores do not change appreciably over time without intervention, regardless of students’ major. In a sample of over 2300 students who had *not* experienced coaching, average leader identity scores of first-year students (M = 3.91, n = 847) were barely distinguishable from those of sophomores (M = 3.90, n = 640), juniors (M = 3.99, n = 423), or seniors (M = 4.01, n = 406). What small differences emerged across year in school might even be attributable to selection bias in survey responses or to institutional attrition.
Validation of Changes in Self-Reported Leader Identity

Each coach was asked at the end of the semester to nominate the 1-2 students who grew the most as well as 1-2 students who grew the least (all other students received no nomination, so they are placed in the “average growth” category in the graph below). The data below involve over 260 students across two semesters of coaching. These data, which are changes from before to after coaching, reveal strong observational support for the self-reported changes in leader identity that we have obtained from students. As a point of reference, scores on this leader identity measure can range from 1 to 5, and one standard deviation is approximately 0.5 points. Thus, although even changes within the “least growth” group are substantial, changes within the “most growth” group are enormous, approaching two standard deviations. Note that coaches do not have access to student data, so their observations of growth are made independently of student self-reports.
Note: Nominations by coaches into the “Least Growth” and “Most Growth” categories were made without access to students’ pre-coaching or post-coaching self-assessments. Thus, these nominations are fully independent of the Leader Identity Change scores that they validate.

Similarly, roommates and friends were surveyed at the beginning and end of the semester, taking the same pre and post measures as coached students and making some observations at the end about what they observed in their coached friends. Twenty-five complete friend pairs (coached and non-coached students, the latter referred to below as “acquaintances”) were sampled. This study allows us to ask 2 key questions:

**Question #1: Is the increase in Leader Identity that we see among coached students just a result of completing the Leader Identity measures twice?**

This question derives from the fact that sometimes apparent changes on a measure are the result of what is known as a “measurement artifact,” rather than reflecting a true change in an outcome that is being measured. Measurement artifacts are often the result of demand characteristics, which are cues that lead research participants to believe that a researcher is looking for particular types of responses. Participants often desire to help researchers confirm their hypotheses by giving them what they believe the researchers want to see. Sometimes participants also simply don’t want to appear to be stubborn or intransigent or incapable of change. These sources of measurement artifacts should cause us to question the differences we have observed in self-reported leader identity among students who have been coached. If simply completing our leader identity measures twice creates a measurement artifact, then our sample of acquaintances ought to report just as much change over time as do students who have been coached for a semester. As shown in the graph below, that does not appear to be the case, insofar as coached students within the
sample pairs experienced significantly more growth in Leader Identity than did their friends (i.e., there was a statistically significant time X coaching status interaction, \( p < .01 \)). Thus, the changes in self-reported leader identity that we have measured in students before and after coaching do not appear to be simply the result of their having completed these measures twice (i.e., they are not merely a statistical artifact of repeated measurement).5

Question #2: Can acquaintances perceive who grew as a result of coaching?

- 11/25 acquaintances reported having observed growth in coached students (almost perfectly describing change on at least one of the coached students’ personal development goals). The remaining 14 acquaintances did not respond to this item, which might indicate that they observed no growth or that they simply did not wish to complete this open-ended question. It is worth noting in this regard that among students whose acquaintances did not respond to this item, their coaching goals were somewhat less overt or “visible” compared to the goals of students whose acquaintances did respond.6

- Acquaintances rated coached students along 7 dimensions that prior data indicated would likely represent common coaching goals within the sample, as well as two “foils” (enthusiasm for Rice athletics, concern for the environment). One of the potentially goal-related dimensions did not appear in any of the coaching goals within the sample, so I do not show it in the figure below. Ratings go from “none at all” (=1) to “a great deal” (=7).
Goal-related growth was, on average, substantially higher than was growth on the foils, particularly among students who actually identified the domain as being one of their goals. Note that all coached students were rated by their acquaintances as having grown in self-confidence, regardless of whether or not this was one of their goals. This is an important result and provides support for our use of self-confidence as a key element of our Leader Identity scale as a foundational outcome measure for coaching. See the figure below for details across groups and goals.

Secondary Benefits of Professional Coaching

The Doerr Institute is dedicated to helping students grow in their abilities as leaders, starting with the foundational element of developing a leader identity. However, given the nature of the coaching relationship, particularly the centrality of self-reflection on one’s goals and values (which we have built into our coaching process through a standardized self-reflection assignment), we might expect to see some secondary benefits to well-being accruing to students who work with a leadership coach. These potential well-being benefits include an increased sense of purpose and meaning in life, increased life satisfaction, and decreases in psychological distress (e.g., anxiety and depression). We tested these possibilities in the Spring of 2018 by administering measures of these constructs before and after coaching. The graph below shows the average levels of each of these constructs measured near the beginning of the semester and near the end of the semester. All observed changes in student well-being are statistically significant ($p < .001$).
A follow-up study on these observed changes in well-being is currently underway at Rice to help us better understand their nature and the underlying causal mechanisms.

**Well-Being Benefits of Coaching**

![Bar chart showing well-being benefits of coaching over time](chart.png)

**Conclusion and Future Directions**

The Doerr Institute is a new initiative at Rice University whose mission is to enhance the leadership capacity of Rice students across the university. Central to this mission is careful measurement of outcomes, which enables the Institute to avoid falling prey to many of the pitfalls that are endemic to such endeavors – including such problems as group think, the confirmation bias, and the Good Samaritan bias (assuming you are having the effects that you intend to have because you mean well).

As the preliminary evidence in this report shows, the impact of just one of the Institute’s programs, one-on-one leadership coaching, appears to be quite meaningful, at least in terms of growth in students’ leader identities and well-being. Current and future projects will continue to explore and test the limits of these preliminary conclusions. One major project that is already underway is an attempt to provide every graduating senior at Rice with a “leadership experiences score,” based upon a responsibility-weighted coding of every leadership role that students have held during their time at Rice. This project will allow us to examine whether students who participate in leadership coaching and other Institute initiatives exhibit *behavioral* evidence of a changed trajectory in terms of their leadership roles while at Rice. Although we do not equate leadership with formal authority or titles, we should expect to see an increase in students’ likelihood of stepping into formal
leadership roles as a result of their engagement with the Institute if we are truly having the transformational impact that we mean to have. Likewise, if students who are involved in initiatives such as one-on-one coaching are experiencing real change that is observable to others (as suggested by our preliminary results with coaches and acquaintances), then these students should be more likely to obtain the support of their peers that is necessary for the assumption of most leadership roles available to them. We expect to have a preliminary analysis of these leadership experiences scores by the end of the summer of 2018, although the assessment of this type of impact will necessarily continue over the next several years.

Additional projects in the near future will explore some of the secondary benefits of one-on-one professional coaching, including appropriate comparison groups that will also take our measures of well-being and leader identity. The apparent well-being benefits that are described in this report deserve further investigation, as they suggest the possibility of a variety of other, tertiary benefits, including benefits to academic performance, retention, and perhaps even athletic performance (for student athletes). The university, too, might experience some important benefits as a consequence of the Doerr Institute’s programs, especially in the area of student recruitment. Given the high level of competition among elite, selective universities for the highest caliber students, schools that offer such intensive leader development programs ought to realize a competitive advantage over those that do not, once the existence and merits of such programs become known to prospective students (and their parents). Anecdotally, we are beginning to see some evidence that this is the case at Rice (e.g., a 20% increase in applications to Rice in the last year alone, references to the Doerr Institute in student application essays), but more rigorous investigation seems called for.

Unlike most coaching, which tends to occur in small-scale engagements or within an organization, the professional coaching enterprise at the Doerr Institute allows for a wide variety of assessment opportunities, and over the next few years we plan to take advantage of our unique “laboratory” at Rice University to evaluate and advance a set of best practices specific to the professional coaching of college students. Our work with students has already begun to garner recognition from professional coaching organizations – for instance, in 2017 the Doerr Institute was runner-up for the International Coaching Federation’s Prism award, and in 2018 the Institute won the Gold Designation from MEECO (Measuring Excellence in Executive Coaching Organizations). We are encouraged by our preliminary evidence of coaching’s effectiveness with college students, and we look forward to uncovering more evidence regarding how coaching and related approaches can be used most effectively within this unique population.

Footnotes and References

This plan follows a format for effective goal setting derived from scientific research over the last five decades, and following its co-creation between the student and coach, goal progress is defined and monitored throughout the remainder of the coaching engagement.


The problem of self-selection bias represents an additional threat to validity in our assessment work. However, we have found that students who have come to us to work on their leadership skills are a very good representation of the overall student body, differing only in their desire to grow as leaders (this difference emerged on a single item within a large, campus-wide survey). Notably, we have also seen that higher scores in terms of desire to grow as a leader were negatively related to growth in leader identity over a semester in a sample of over 100 students engaged in professional coaching. Thus, the one difference we have found between students who come to work with us and those who haven’t yet is actually predictive of less growth on our focal outcome measure.

Examples of more visible goals include assertiveness and confidence, whereas examples of less visible goals include self-awareness and time management.


Appendix: Pre-Post Leader Identity Scale

The Leader Identity Scale is a brief integration of multiple facets of a person's leadership self-construal, including self-categorization as a leader, leadership self-efficacy, motivation to lead, authenticity, and self-awareness of one’s strengths and weaknesses as a leader. In a sample of over 2800 students at Rice, these 9 items exhibited a largely unidimensional structure in a principal axis factor analysis. All items loaded above 0.50 on the dominant factor, which accounted for 52.4% of the total variance, with only two items loading on a secondary factor (these items’ loadings on the secondary factor were substantially smaller than their loadings on the dominant factor). For examples of related measures of leader identity, see Chan and Drasgow (2001), Hendricks and Payne (2007), Hiller (2005), Hong (2005), Lord and Hall (2005), Murphy (2001), and Day et al. (2009).

Response scale:

1 = Disagree strongly
2 = Somewhat disagree
3 = Neither agree nor disagree
4 = Somewhat agree
5 = Agree strongly

Items (α = .89):

1. I see myself as a leader.
2. I feel confident to lead when opportunities arise.
3. I have a desire to pursue roles in which I can be a leader.
4. I have a clear understanding of my strengths as a leader.
5. I feel confident enough in my personal convictions that I would assert them even if it meant disagreeing with friends, teammates, or colleagues.
6. I am comfortable expressing an unpopular position when I feel it is appropriate.
7. I act in ways that are consistent with my values.
8. I understand the ways that my weaknesses as a leader can affect others.
9. I have a clear sense of my values and core beliefs.