

Developing Engineering Leaders Using a Reflective Autobiographical Exercise

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This paper describes an autobiographical exercise that helps engineering students build self-awareness of their distinctive leadership strengths and aspirations. Originally based on the theoretical work associated with the Reflected Best-Self¹ (RBS) and life narratives², this semester-long assignment enables students to use qualitative and quantitative methods to discover and articulate their unique capabilities, values, defining life experiences, and other core elements of their identity. We often think of college as being one of the most formative periods of someone's life and evidence from research supports this important observation³. Yet many students may graduate from college without ever spending time addressing questions that are central to forming a confident sense of self - "Who am I", "What do I stand for", "Who do I want to become", and why? These kinds of questions are rarely addressed in typical college courses and probably never addressed in engineering courses. We know from leadership research that these types of questions are not only important for adult development⁴, but they are especially important to leader development⁵.

The autobiographical exercise described in this paper is based on several streams of research, as well as ten years of application and use in my leadership and engineering leadership courses. I have used it with graduate, undergraduate, and executive students in both engineering and non-engineering contexts. The exercise is grounded in research and theory underlying the RBS framework, which is primarily a qualitative-developed assessment of personal strengths. The exercise described below builds on this framework and introduces a variety of quantitative assessments to help validate and extend the results of the qualitative analysis.

In this paper, I begin by situating the exercise within the larger theoretical and empirical context of the importance of developing self-awareness in engineering education and leadership development. I then describe how I position and introduce the exercise within a larger engineering leadership class. Within this discussion, I describe details on how I use the actual assignment and manage some of its more challenging elements. I conclude with suggestions on how to grade this assignment and implications for the development of leadership among our engineering students.

The Development of Self Awareness

One of the functions of the university experience is to enable students to transition from a life at home to an independent life as a young adult. Some research suggests that these are the most formative years of a young adult's life, where the choices, relationships, and careers paths that one establishes has a "defining" impact on future life outcomes such as happiness, and earning potential⁶. Elements of the college experience can serve as an enabling role in this development process; experiences that challenge students to become aware of who they have been and who

they can become in life. As students become more aware of these core issues, they can become more active in the development of their current and future goals and aspirations.

The National Academy of Engineering's 2004 report on *The Engineer of 2020* is perhaps the most contemporary and elaborated call for engineering educators to infuse leadership development into curricular goals and programming⁷. Recognizing that a purely technical education falls short of preparing engineers to understand and solve society's most pressing problems, the report outlines a set of desired leadership attributes for the engineer of the future (i.e., creativity, communication, professionalism, high ethical standards, resilience, lifelong learning, etc.). The report falls short, however, in outlining how to develop the capabilities to enable students to become strong performers in professional contexts and eventual leaders among their engineering peers.

One of the recent advances in our understanding of human performance is the importance of understanding, developing, and leveraging personal strengths⁸. After a lifetime of research and publications on human and organizational performance, for example, Peter Drucker claimed in one of his final publications that one's strengths provide the primary basis on which people will deliver their highest levels of performance and greatest contributions in life⁹. He points out that, while understanding and addressing our weaknesses is important, individuals will achieve greater gains in performance by identifying strengths, focusing time and energy on developing them, and making careful choices in deciding where to put these strengths to work. Drucker observes that most people have an inaccurate understanding of their strengths (and weaknesses) and recommends a rigorous, multi-year method for identifying strengths. At around the same time that Drucker's work was published, several professional-oriented books were published to advance the practice of strength-based development and assessments¹⁰.

In the more recent social science literature, theorizing around the concept of a Reflected Best-Self provides a broader perspective on understanding and identifying personal strengths¹¹. According to these authors, strengths are defined as personal qualities displayed when people have performed at their best and they are comprised of competencies, talents, values, and personality attributes. Individuals are capable of drawing from their past behaviors and experiences to develop an understanding of their strengths. The originating faculty at the University of Michigan prescribed a process for discovering these strengths that relies mainly on qualitative feedback from multiple sources¹². As these authors report, this RBS process for discovering strengths has been used with over 26,000 people in universities and Fortune 500 companies.¹

I began using the RBS process in 2005 after adopting a textbook in which this exercise was incorporated¹³. In originally adopting this exercise, which culminates in a semester-long paper, the assignment aligned with the largely qualitative RBS process outlined in the textbook. The process begins by explaining the exercise to students and why it is important. This is followed by instructions on how to solicit qualitative feedback from others, how to analyze this data, and then how to draft a summary of strengths based on the results of the qualitative data analysis.

My initial experience with the RBS exercise was a mix of hesitation, skepticism, and fear over how to manage this very personal assignment. As I begin to review the early papers and the

¹ A more detailed description of this Reflected Best-Self discovery process and accompanying workbooks is available from the University of Michigan's Center for Positive Organizations <http://positiveorgs.bus.umich.edu/>

sometimes deep insights they surfaced, I embraced the assignment, fully. I have since developed my own version of the assignment, which adds elements of quantitative assessments as well as several categories informed by the emerging literatures in leadership development. The overall structure and elements of exercise described below embodies my cumulative experiences with the exercise.

How to Position and Introduce the Assignment

Placement of the assignment within the larger structure and flow of the class is important. I frame the assignment in the syllabus with at least a paragraph-length description and usually portion it as one of the highest weighted assignments in the class; it is usually at least 25% of the overall grade. On the first day of the class, therefore, I introduce the assignment along with the other major components of the syllabus, emphasizing that the paper is one of the most challenging but rewarding deliverables for the class. This brief introduction primes the students' expectations for a later, more detailed explanation of the exercise.

I divide the assignment into three main phases and introduce the first phase in the first month of a full semester (four month) class. My engineering leadership courses typically have an early series of modules on the importance of building self-awareness as part of leadership development. Within these early modules, the class discusses Drucker's "Managing Oneself" and we typically spend an entire class reviewing its core questions: What are my strengths, How do I perform, What are my values, Where do I belong, What should I contribute ¹⁴? When discussing the article, I invite students to not only reflect personally on the questions, but to consider how one might develop accurate and meaningful answers to them. Drucker's questions are essentially sets of problems to be solved; problems that are as ambiguous as they are challenging. This is always a lively discussion and an excellent prelude to introducing the RBS assignment.

On the day that I introduce the first phase of the RBS assignment, I usually assign an article that frames the importance of life narratives in the context of leadership and followership development ¹⁵. This highly cited article also explicitly references the RBS process as one method for building awareness of one's distinctive leadership attributes. After discussing this article, I then show a video Steve Jobs's 2005 commencement address at Stanford University as an example of a very personal life narrative from a leader in technology. Engineering students can especially relate to this speech and I ask students to attend to the nature of his stories and importance of discovering strengths and a meaningful sense of life's purpose. After this discussion, I then introduce the RBS assignment as a structured methodology to begin the journey toward learning one's distinctive strengths and life narrative. The following provides my actual instructions for the assignment (in red) and brief explanations and suggestions.

Phase One of the RBS Assignment

Step One: Solicit feedback for this assignment

1. Identify 15-20 people who know you well and who will provide honest and meaningful feedback about your past experiences. These may be family, friends, mentors, teachers, or anyone you have interacted with for an extended period of time. In considering

potential respondents, aim for many different forms of personal relationships (i.e., not just friends and family) but be sure to include people with whom you have interacted for many years.

The reason it is important for students to reach out to people who have known them for a long time is because these individuals will likely be able to draw on several moments where they witnessed the student performing “at their best”. These positive moments are specific instances of memorable performance and each short story of these moments will form the foundation of qualitative data for this assignment. I encourage students to also reach out to people they have known for a shorter period time; the qualification being that they can share three stories of the student performing at their best.

2. Email each person a request for feedback about your strengths, using a format similar to the sample below. While requesting such feedback may seem awkward at first, people are usually more than willing to provide this information. After all, you are asking for positive testimonials from your past, not critical ones. You will need at least 10 respondents and 30 stories to complete this assignment. As a general rule however, the more feedback you get, the better.

Sample Request

I am attending a leadership class at (your university) and would appreciate your assistance on one of my course assignments. This involves my contacting a few people who know me well enough to share specific experiences from my past. I am inviting you to become part of this assignment.

Here is what I need: Please reflect on our past experiences and describe up to three situations where you saw me perform at my very best. It doesn't matter how large or small these events were; the main requirement is that you see them as meaningful expressions of my personal strengths. In your feedback, describe these experiences in enough detail that I can understand the circumstances, what I did, and any relevant outcomes. An example is provided below, but consider this example *only* as a guide in terms of style and format.

Please email these responses back to me no later than (30-45 days from today). Thank you very much for helping with this assignment and I will be back in touch with you after I complete the assignment.

Example

One of your strengths is: Your ability to motivate people to work well together.
For example, I think of the time...

When we were falling behind schedule on the software implementation project, the stress was building within the group, and the quality of our work was beginning to suffer. You noticed that we were not doing our best work and challenged us to rethink our approach. You reminded us of what we were capable of doing if we worked more together and this caused all of us to pause. No one

else would have thought to intervene like you did and it made a real difference. In the end, we were all very proud of what we accomplished together and you played a big part in us getting there.

The originators of the RBS exercise recommend that students receive stories from at least 10 respondents and in my experience, most students can find at least this many people to provide the needed stories. Over the years, however, I have had a few undergraduate engineering students struggle to engage 10 respondents and I ask them to come to me for one-on-one coaching on finding respondents. My suggestions include exploring a wider network of relationships such as neighbors, family friends, church members, volunteer work, extra-curricular or hobbies. I also encourage students to persist with sending reminders to their original requests and these suggestions often yield the needed responses.

I recommend that students should target 15-20 respondents because not everyone will cooperate or provide three stories each. If a large number (15 or beyond) do respond, however, this additional data will provide a stronger foundation of qualitative stories to analyze. More data is better than less data for this exercise because it provides a richer breath of experiences to draw from in discovering and validating insights about strengths. Students often use clever methods to gather data, including creating special Facebook pages, emails, and forms of instant messaging. These digital tools are especially productive because students can simply cut and paste the stories that they gather.

One final point, and a problem that I occasionally encounter, relates to providing respondents with the example (above). I have seen several RBS stories from student respondents that, unfortunately, look very similar to my example. I think it is crucial to provide an example so respondents can see the nature and brevity of the kind of story that we are seeking. Engineering instructors that adopt this assignment might modify their examples should they experience this problem. On the whole, however, this process works reliably and the diversity and richness of the stories usually align with what the exercise needs.

This first phase of the assignment concludes when students have received all of their stories from their respondents. It is helpful and productive during these 30-45 days to remind the students of the deadline for gathering their feedback. During these announcements, I also encourage students to come see me for help if they are struggling to gain the responses that they need.

Phase Two of the RBS Assignment

Before beginning this second phase of the exercise, I emphasize to students that the qualitative stories they receive from others should be the primary source of data to analyze in discovering their personal strengths. The reason is that the stories that they receive from others are based on their actual experiences, behaviors, and achievements. For this reason, a careful analysis of these stories should reveal a relatively valid assessment of their personal strengths. The quantitative

assessments that I integrate into this RBS exercise (explained below) are based mostly on self-reports, which are less reliable measures of actual behaviors.

What these quantitative assessments can do, however, is validate some of the results of the qualitative analyses. This is a very important point to emphasize, especially for engineering students who are drawn to quantitative data and who tend to be less comfortable with qualitative data and analyses. Hence, this “set up” for a discussion on analyzing the stories they received from their respondents is critical to a successful implementation of this exercise. Otherwise, students will take the “path of least resistance” and base most of their paper on the quantitative assessments described below.

When I introduce this phase, I spend a few minutes describing how strengths are holistically defined in this exercise (summarized on a PowerPoint) ¹⁶. Strengths are an integration of our (a) self-identities, which is how we express ourselves in a given situation, (b) distinctive capabilities, which are skills and abilities we display when performing at our best, (c) values, which are personal standards of conduct or moral principles that guide our actual behavior, and (d) personality, which are relatively enduring and stable personal traits. In my engineering leadership classes, I cover all of these concepts in greater depth in other modules on self-awareness, so this description of strengths is a brief recap. The main point I emphasize here is to conceptualize strengths as a synthesis of several other elements of self-awareness.

The following are the instructions I use to explain how to perform a qualitative analysis of the collection of stories that students have received.

Step Two: Analyze the Feedback

Compile all of the individual stories into one document and analyze them for insights into your natural talents, skills, and personal values. You might create a table such as the one below where you can begin to compile categories of your specific strengths along with supporting examples. In the “Insights” section, try to develop a deeper understanding of specific examples of strengths; what it is, where it came from (born or learned), what it means to you, why it is meaningful, how it might help you in the future, etc... Here is an example, using the example of feedback provided for this exercise:

I Identity, Skills, Values, Personality	II Example or Evidence	III Insights
Natural ability to keep calm when others are stressed.	Software project: We were all behind and some in the group were stressing out.	<ul style="list-style-type: none"> - This seems to be a personality trait, as I have always worked well under pressure. - As a leadership quality, this could help in crisis situations.
A lack of fear in speaking up when other won't.	Software project: Someone needed to call everyone out on the sloppy work we were doing.	<ul style="list-style-type: none"> - This is a skill I've practiced and learned over time, especially in my debate team and at home. - I once read a paper on courage and will now learn more about it.
I value good working relationships.	Software project: How I helped us come together when we were beginning to split apart.	<ul style="list-style-type: none"> - I thrive when people are all getting along and working well together. - This seems to come natural to me.

The table above is an analysis of the example that students email to their respondents. It illustrates how one paragraph can be broken down into smaller segments, which can each be analyzed separately. I ask students to read through each of their stories looking for evidence of any one of the four components of strengths. Once they identify this component and place it in Column I, they should move across to Column II and explicate the specific example of the actual behaviors or actions.

In Column III, students should speculate (or theorize) about how the insights they gain from this analysis deepens their self-awareness and strengthens their leadership development. These insights, I emphasize, are the most important outcomes of this qualitative analysis. I remind students of Drucker's observation that it usually takes many years of careful self-analyses to accurately discover and identify one's strengths¹⁷. If students adopt the methods I describe here to rigorously and carefully analyze their stories, they too can discover important insights about their strengths *within one semester*.

During this explanation, I usually walk through a few other examples from past RBS papers, ask for questions, and mention to students that they will turn in these "tables" of analyses in the appendices of their paper (see below). In my experience with hundreds of students, they are usually able to grasp the qualitative analysis process and produce the expected table of results. Since this is a purely self-directed analysis, many report actually enjoying the learning and discovery process.

Phase Three of the RBS Assignment

The third and final phase of the RBS process involves explaining the components of the paper itself, which are outlined below. I often, but not always, cover this “Writing of the Paper” on the same day that I explain the analysis process. When I break this process up into three parts, however, I usually give the students about a week to conduct their qualitative analysis of their stories.

I begin the discussion about writing the RBS paper by reminding everyone of the purpose of the assignment and the benefits of developing self-awareness. I often ask students the following question: Why do you think some political candidates write their autobiography BEFORE they run for elected office? Students usually point out that candidates probably do this to clarify “who they are” and “what they stand for” prior to subjecting themselves and their loved ones to the process of seeking public office. This clarity of self-awareness, I point out, enables aspiring political leaders to enlist followers and help them stand strong as they endure the inevitable criticisms that come with a competitive political contest.

I then point out to students that, while they are certainly not running for political office, they may well be asked, one day soon, about their distinctive strengths and aspirations in job interviews. And unlike most student job candidates, those completing this RBS paper will be far more prepared to deliver meaningful answers to questions about personal strengths, values, and aspirations. Importantly, this paper will also enable students to make sound choices on the kinds of employers they will seek out. This whole exercise challenges students to think carefully in choosing employers than align with their personal values and to think strategically about “where to contribute” their strengths. Again, this is how I “set up” and frame the following instructions on how to write the RBS paper.

Step Three: Writing the Paper

Once the feedback for the assignment has been gathered and analyzed, write a paper that integrates and synthesizes your insights. The paper should be written, labeled, and organized as described below. You can be **as creative** as you want in preparing the paper, just make sure its content meets the minimum requirements outlined below. Keep in mind that this may be the only paper of its kind that you will ever write, so your time, patience, and effort can result in long lasting insights.

- I. **A Best-Self Portrait.** Even though this is the first part of your paper, it should be completed last, as it is a summary of the entire paper.
 - This narrative and self-portrait should integrate insights from all of the sources of information you used for this assignment. It should also synthesize key insights from all of the other sections of the paper outlined below.
- II. **Strengths grounded in my principles and values.** In this section, explicate the personal principles and values that you discovered in your analysis of the feedback. Consider these in the context of your personal strengths.
 - There is a very real difference between values and principles that we *hope to live by* and those that we *actually live by*. Aim to discover and articulate

the latter; those that shape our aspirations as well as our actions (research shows that most of us are unaware of our core values).

- Complete also the “VIA Survey of Character Strengths” at the University of Pennsylvania <https://www.authentic happiness.sas.upenn.edu/testcenter> This is a university-based, scientifically validated survey of personal values and character virtues. The quantitative results from this assessment can be an excellent way to validate (or triangulate) some of findings from the qualitative analysis of your RBS feedback.

In discussing these first few subsections of the paper, I point out that I do not prescribe any page lengths for the final deliverable. I do this to signal to the students that they have the freedom to follow their instincts in crafting the paper. I do emphasize, however, that the papers must address all of the core sections and that final deliverables typically range from 10-60 pages in length (single-spaced). I also urge students to “write this paper for yourself”; not for me.

Some students have fun creating their “self-portraits” and I often provide examples of the more creative self-portraits that I have received from over the years (preserving student anonymity). While most students usually write a standard “executive summary” of the paper as a self-portrait, others are much more artistic. I explain how three engineering students have submitted originally created songs that embody their summary of insights. Two students have crafted beautiful oil paintings and one created a YouTube video of a verbal presentation of his summary. Many students have created magazine covers that highlight main insights in the form of headlines and a few have written letters to themselves or to their future children about their insights. This is one of my favorite parts of the papers to discuss and it really energizes some students to create a meaningful summary of their overall insights.

III. Strengths grounded in my personality. In this section, explicate how your personal traits complement and enable the expression of your strengths. Use the quantitative results of your Big-Five Assessment to write this section.

In all of my engineering leadership courses, we use the IPIP NEO personality assessment available from one of the Pennsylvania State University campuses <http://www.personal.psu.edu/j5j/test/>. I routinely spend about two–three hours of class time debriefing the results with students and linking these results to leadership behaviors¹⁸. For ethical considerations, I do not advise that engineering instructors use this complex personality assessment unless they feel academically or professionally qualified to do so. It is a valuable part of this paper, however, and I recommend including some form of personality assessment. Again, these tend to be among the most enduring personal qualities and traits (values, for examples, tend to change with age; a 20 year old usually has different value systems than a 60 year old).

IV. Personal vision. The exercises in the last section should flow into this section. This part of the paper should not be viewed as a static set of statements but instead, something that may evolve and develop over time. Some issues to consider are your personal and professional ambitions, your hopes and dreams, your extrinsic and intrinsic motivations, your values and principles, and your commitments to others. While this exercise points to the “person that I aspire to

become”, some have found it useful to also consider “the person that I want to avoid becoming”.

- V. **Stress management and life balance.** In this section, provide a personal analysis of the results of the skills assessments from Chapter 2 and how you can use this data to improve your ability to manage stress. Specific issues to address include:
- How do you tend to react and cope in stressful situations? Draw on specific examples of your past – examples that resulted in positive growth and examples that resulted in more negative outcomes. In future situations, what specific practices can you learn to better manage these sources of stress? How can you achieve and maintain work-life balance?
- VI. **Defining events in my life.** This section should describe the events that you believe have had the greatest impact on your personal development and overall sense of “Who I am today”. The stories you received from others may remind you of some of these events and others you may recall on your own. Consider the Ligon et al. reading¹⁹ on the kinds of events and experiences that have shaped some of our greatest leaders in history.
- What specific events or experiences (negative or positive) have had the greatest impact on your development? What were the important circumstance surrounding the experience and what did you learn about yourself? How did you learn from these experiences? What were the roles of others in this learning process?

Sections V, VI, and VII (below) are derived from specific chapters of my course textbook²⁰ and other assigned readings in the class. This allows students to bridge the insights they learned from analyzing their qualitative feedback to other materials we have covered throughout the semester.

- VII. **My I perform and learn.** In this section, provide brief explanations of how you learn in a variety of contexts (new, unfamiliar, routine, school, work, play, etc...) and how you perform. Again, the qualitative data should provide a rich pool of examples of how you perform at your best. One of the most important attributes of this part of the paper is to gain an understanding of how you actually *get things done*.
- In this section, explain whether you prefer to perform in groups or alone, whether you prefer to be a decider or advisor, and other questions posed in this section of the Drucker reading?
- VIII. **Enablers and blockers of my best performance.** In this section, explicate the personal and contextual factors that tend to facilitate or hinder your ability to perform at your best. Insights on these should emerge from your analysis of the RBS feedback, as well as your own reflections on past achievements, failures, or shortcomings.
- Personal *enablers* are natural abilities/talents, habits, beliefs, and other behaviors that positively impact how you perform at your best.

- Contextual *enablers* are factors in your environment that positively impact how you perform. These can be related to specific people (friends, family, co-workers, mentors, etc...), organizations (i.e. work, school, church, clubs, etc...), living arrangements, finances, or any other factors associated with your life situation.
- Personal and contextual *blockers* are similar in source as enablers but these have the opposite effect – they get in the way of, hinder, or limit, your ability to perform at your best. These may include bad habits, overconfidence, lack of manners, lack of personal contacts, etc...

Section VIII is especially crucial because it links to a discussion that we have in class about understanding the *context* in which leadership performance occurs. The analyses of the stories they receive from others provides a very rich pool of data to gain insights into how personal and contextual factors interact with one another to either enable or constrain one's best performances.

- IX. **Responsibility for relationships and networks.** In this section, reflect on and describe the role that relationships and networks play in your life. These may include how you manage your relationships with family, friends, mentors, co-workers, supervisors, followers, as well as more difficult relationships such as adversaries, competitors, or opponents. Issues to address are:
- Who are your most trusted and supportive relationships? Are there people who have tried to help or support you?
 - Who are the major influences in your life? How have they shaped your perspective about leadership?
 - Who are your role models, professionally and/or in leadership? In what ways will you be a role model to others?
- X. **My career aspirations.** In this section, speculate about your career aspirations and what you need to do to achieve them. Consider also some of the key questions raised in the Drucker reading about the kinds of organizations that bring out your best capabilities. Specific issues to address here include:
- What kind of career do I want and why? How does this career align with my values, strengths, and other skills outlined above?
 - What kind of organization do I want to work for to begin this career? How does this kind of organization align with my strengths?
- XI. **My development plan.** The previous sections of the paper provide an honest appraisal of “who I am” and “who I can become”. This section addresses the question, “what I am going to do get there”. This is where you can articulate the goals and outcomes you will need to achieve in order to realize your vision. This section should describe a personal roadmap to becoming a distinctive type of leader.
- What elements of strengths do you want to develop further (personality, virtue, values, capabilities, expertise, relationships, etc...)?

- What are some related learning goals and desired outcomes?
- What kinds of projects or experiences can you choose that align with these goals?
- What kinds of accountability systems can you create to help monitor your progress?
- What short term actions and “small wins” can you achieve?
- In this section, you might consider writing a letter to yourself or someone else; a letter that you can revisit later as a reminder of the possibilities you’ve envisioned.

XII. Appendices. This section should include any additional information that was relevant to the paper. At minimum, it should include copies of the RBS communications that were the source of feedback obtained from others for this paper (i.e. the e-mails soliciting feedback) and the table that summarizes the analysis of personal strengths.

Receiving and Grading the Assignment

One of the biggest challenges that faculty will discover with this assignment relates to grading. These papers usually range from 10-60 pages and for a class of 30 students, grading these papers will become a very heavy task to complete. Further complicating the grading is that engineering students tend to have a diverse range of proficiency and motivation to complete this kind of paper. Some papers are truly inspiring and moving and enjoyable to read. Others may be poorly written, disorganized, or incomplete.

To overcome some of the challenges of grading, I usually develop a rubric where I assign a weighting of each section that ranges from five to fifteen points. For example, I usually assign weightings of ten to fifteen points for sections II and VII because of the length and centrality of these sections to the qualitative analyses of the stories. I assign weightings of five to eight for sections XII and X because these tend to be straightforward narratives that do not require as much depth and analysis as some of the other sections. After assigning weights to all sections and creating a rubric, I then review and grade all of the papers in blocks of similar sections. This way, I can evaluate the papers more consistently and relative to one another. I try not to penalize engineering students who are not skillful at reflective writing and instead, focus more on the content and thoroughness of their answers to each section. While this is a very laborious assignment to grade, I found that it is rewarding to the students and to their personal development. As students often report back to me, they may never again write a paper like this; a paper that explores some of the most important and meaningful questions that we all face in our lives.

Conclusions

This paper represents a decade of personal experiences implementing and leveraging this RBS assignment with engineering and non-engineering students. It is grounded and informed by

several streams of emerging research on leadership development, including the RBS concept ²¹, the development of leader identities ²² and life narratives ²³. It also aligns with the latest theory that links adult development with leader development ²⁴, a subject that is especially important to young adults and the university experience. Finally, the assignment helps operationalize an aspiration from the National Academy of Engineering that our engineers begin to develop their leadership capabilities as engineering students ²⁵. This latter point is especially important because recent evidence suggests that our current engineering schools may hinder, rather than develop, the values and motivations that students need to engage in solving some of society's most pressing problems ²⁶. For this reason especially, I encourage my colleagues to adopt and integrate an exercise like this as a step toward helping student fully realize the promise that a good engineering education can deliver.

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