



## **Leadership in Multidisciplinary Project Teams: Investigating the emergent nature of leadership in an engineering education context**

**Megan Kenny Feister, Purdue University**

Megan K. Feister is a doctoral candidate in the Brian Lamb School of Communication at Purdue University. Her research focuses on organizational identity and socialization, team communication, ethical reasoning development and assessment, and innovation and design. Megan holds a B.A. in communication from Saint Louis University and a M.A. in Organizational Communication from the University of Cincinnati.

**Dr. Carla B. Zoltowski, Purdue University, West Lafayette**

Carla B. Zoltowski, Ph.D., is Co-Director of the EPICS Program at Purdue University. She received her B.S. and M.S. in electrical engineering and Ph.D. in engineering education, all from Purdue University. She has served as a lecturer in Purdue's School of Electrical and Computer Engineering. Dr. Zoltowski's academic and research interests include human-centered design learning and assessment, service-learning, ethical reasoning development and assessment, leadership, and assistive technology.

**Prof. Patrice Marie Buzzanell, Purdue University, West Lafayette**

Patrice M. Buzzanell is a Professor in the Brian Lamb School of Communication and the School of Engineering Education (courtesy) at Purdue University. Editor of three books and author of over 140 articles and chapters, her research centers on the intersections of career, gender, and communication, particularly in STEM. Her research has appeared in such journals as *Human Relations*, *Communication Monographs*, *Management Communication Quarterly*, *Communication Theory*, *Human Communication Research*, and *Journal of Applied Communication Research*, as well as proceedings for ASEE and FIE. A fellow and past president of the International Communication Association, she has received numerous awards for her research, teaching/mentoring, and engagement. She is working on Purdue-ADVANCE initiatives for institutional change, the Transforming Lives Building Global Communities (TLBGC) team in Ghana through EPICS, and individual engineering ethical development and team ethical climate scales through NSF funding as Co-PI. [Email: buzzanel@purdue.edu]

**Dr. William C. Oakes, Purdue University, West Lafayette**

William (Bill) Oakes is the Director of the EPICS Program and Professor at Purdue University. He is one of the founding faculty members in the School of Engineering Education with courtesy appointments in Mechanical, Environmental and Ecological Engineering as well as Curriculum and Instruction in the College of Education. He has received numerous awards for his efforts at Purdue including being elected as a fellow of the Teaching Academy and listed in the *Book of Great Teachers*. He was the first engineer to receive the U.S. Campus Compact Thomas Ehrlich Faculty Award for Service-Learning. He was a co-recipient of the U.S. National Academy of Engineering's Bernard Gordon Prize for Innovation in Engineering and Technology Education and the recipient of the ASEE Chester Carlson Award for Innovation in Engineering Education. He is a fellow of ASEE and the National Society of Professional Engineers (NSPE).

**Qin Zhu, Purdue University**

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Engineering as a profession is increasingly a team-based and multidisciplinary endeavor, requiring not only technical skills but also the ability to work well with diverse groups of people. In engineering education, students often participate in project teams in which the members must make and execute decisions, relying increasingly on their own reasoning and abilities while learning to depart from the strictly teacher-led notion of learning.

It is important to understand how students perceive leadership, how they understand a leader's role and importance, and how leadership impacts the work of the team. This study offers a view into how leaders emerge and are viewed on these project teams. Using a discursive psychological approach, the researchers examine what characteristics the students find most salient about a leader on their particular project team. The researchers investigate some of the qualities that emerge across the participants to generate a notion of what students in this engineering education context think about leadership and its role in engineering education programs. The authors also consider how leadership is perceived and handled in project teams informs our understanding of how leadership can be taught and learned and how young engineers can develop those essential skills in today's complex and fluid work environment.

### *Leadership in Small Project Teams*

Communication is a critical component of working in small groups, yet it often goes unnoticed or taken for granted. In a small group context, effective communication is a major factor in a group's success or failure. Communication allows team members not only to share ideas and discuss issues, but also to manage relational elements of the team and interpersonal issues between team members.

Leadership is fundamentally about influence, with leaders serving to guide, direct, or control a group<sup>1</sup>. Over the course of leadership studies, a number of different perspectives contribute to understanding how leadership takes place. One common lay conceptualization of leadership envisions it as a set of traits a person possesses which make them well-suited to assume the traditional notion of a leader, such as being aggressive, confident, and competent<sup>1</sup>. However, while a leader can be appointed or take control of a group on his or her own, informal team processes often can undermine that person's authority resulting in team members recognizing someone else as their leader<sup>2</sup>. Indeed, the emergence of leadership is often through a complex process of role emergence, in which different members are ruled out until a leader becomes evident<sup>3</sup>. Sometimes groups do not actively choose a leader at all but simply incorporate leadership substitutes, such as standard operating procedures, or follow whomever provides direction in a given instance.

A leader who exerts too much control can cause team members to disengage from the project, as they may feel their contributions would not be taken into consideration even if offered.

Decision-making groups with a strong authoritarian leadership style can suffer from lower levels of innovation, or even groupthink. Groupthink is the illusion of consensus brought about by reaching a decision too quickly<sup>4</sup>. Such illusions occur when a group fails to critically analyze, test and evaluate ideas before implementing them, resulting in decreased quality of decisions made.<sup>4</sup>

For these reasons, effective decision making through small group communication requires the cultivation of an open environment in which team members feel comfortable voicing ideas and objections.<sup>5</sup> Different leadership styles may be more effective in different contexts, depending on the group and the task at hand.<sup>6</sup> For example, the situational perspective argues that specific leadership styles are more appropriate for different situations. Groups with highly structured goals and high stress often move toward an authoritarian style of leadership, as members are mindful of the end goals but are uncertain how to achieve them.<sup>7</sup> Groups facing lower uncertainty, lower stress, and less structured goals tend toward more democratic, participative styles of leadership. From a situational leadership perspective, the leadership style cannot be predetermined, but emerge as the context and exigencies dictate.

Grounded in a communicative approach, understanding leadership as an emergent, fluid process that results from interactions between team members offers useful ways to conceptualize leadership not as a person, but as specific communicative behaviors that enable the group to perform most effectively.<sup>8</sup> The functional communication perspective of leadership differentiates between task and process leadership, both of which are essential for a group's success.<sup>9</sup> Task leadership involves communicative behaviors that help a group move toward its goal. These behaviors include initiating, coordinating, summarizing, and elaborating. Process leadership behaviors are those communicative behaviors which maintain the group's interpersonal relations and facilitate a climate that will satisfy group members. These behaviors include releasing tension, gatekeeping, encouraging and mediating.

Performing these communicative behaviors can position a person a person in a leadership role within the group, as well as encourage team members to orient themselves to the project more effectively. These behaviors are seen as a set of functions that are often distributed among group members, relieving the group of the need to rely on one designated leader. Team members can perform these functions and ensure that the team still accomplishes its goals, even if the designated leader lacks the ability to lead the team.

This paper contends that viewing leadership as a more fluid, communicative element of group interaction offers a useful way to approach how leadership is handled and how it functions in the multidisciplinary project teams at the center of this study. This framework for conceptualizing leadership as grounded in communicative behaviors allows the researchers to examine the group interactions in these teams and gain insight into how they are perceived by team members.

### *Discursive Psychological Approach*

This study examines students' talk about leadership in multidisciplinary project teams. The researchers conducted interviews and examined the talk of students participating on these teams to explore their notions of leadership- how it emerges, what qualities a leader has, and the effects

of leadership on these kinds of teams. The authors use a discursive psychological approach to examine how the students characterize and position leadership within their teams, as well as what perceived effects that leadership and its associated characteristics has on team performance. A discursive psychological approach enables the researchers to examine discourse on two levels: “little d” discourse as language-in-use in everyday talk, as well as “big D” Discourses which refer to systems of language or other sensemaking practices that form our social realities.<sup>10</sup> These Discourses inform social practices by offering certain discursive resources that are evidenced in the “little d” everyday language of participants.

Discursive psychology relies on the belief that reality and psychological phenomena are constructed through language and acted out in social contexts. This approach locates the creation of meaning and reality *in* social interaction; individuals as social actors *actively create* reality and shape identity through their talk. Descriptions of psychological and social objects can be studied for the way social actors invoke them in the course of certain communicative activities, such as blaming or complimenting.<sup>11</sup> These descriptions, a kind of “mental thesaurus,” can be studied as a toolbox of resources for doing things (p. 740). Given this understanding of psychology and social interaction, discursive psychology focuses on the way reality and the mind are *constructed* by people through language, throughout their everyday execution and description of practical tasks.<sup>12</sup>

Discursive psychological scholars differentiate between two levels of “discourse” by referring to “big D” or “little d” discourse (for discussion, see <sup>13;14;15</sup>). “Little d” discourse refers to language-in-use, or the everyday talk and texts in social interaction.<sup>16</sup> “Big D” Discourse is viewed as the general and enduring systems of thought, historically and culturally rooted in systems of power and knowledge. Discourses order the world in certain ways, as well as informing social practices.<sup>13</sup>

Scholars utilizing discursive psychology conceive of Discourses as “interpretative repertoires” for communicating actors, which are ways of talking embedded within larger societal or cultural Discourses, which supply linguistic resources to communicating actors in the form of habitual forms of argument,<sup>17</sup> terminology, metaphor, and other language devices.<sup>16</sup> Through this understanding, researchers can view interpretative repertoires as discursive resources for social actors in their effort to understand and create identity within multiple competing Discourses. Given this focus, discursive psychologists seek to analyze how a person’s talk can create his or her own identity, shape the identity and position of others, and can do interactive work such as countering an undesirable image of the self.<sup>18</sup> Scholars using a discursive psychology perspective will analyze talk and interaction to see how individuals use characterizations and evaluative expressions to attribute identity and motive to others, how they counter and respecify others’ descriptions of their identity or actions, and how psychological themes are handled and managed implicitly.<sup>19</sup>

It is important to note that discursive psychology is not in itself a methodology. Rather, it is an analytical approach that is embedded in social constructionist assumptions, as discussed above. As such, the researchers focused on the interview texts to investigate how participants describe their experiences on their project teams, as well as how they draw from specific Discourses to frame their own experiences as well as those of their project team as a whole.

## Method

The data examined in this paper were collected as a part of a larger study examining individual and team ethical reasoning in an engineering education context. The project involves data from four different universities that each have undergraduate engineering programs with multidisciplinary teams. The programs all have distinct features, which are represented in the table below. Particularly important for this study are the respective orientations of each program that are detailed in that table. The programs are all multidisciplinary, comprised of students from a range of years and majors, and vary in length from one semester to several years. Whereas each program is distinct and has unique features, they all offer students an opportunity to get practical experience with engineering and product design and development. To protect the confidentiality of the participants and the participating programs, we will refer to the universities as Institution A, Institution B, Institution C and Institution D.

The researchers conducted a total of 51 interviews with students participating in multidisciplinary project team programs across four different universities. Interviews ranged from 20 to 60 minutes, and six to fifteen interviews were conducted at each university based on student availability and desire to volunteer. The interviews were audiorecorded and later transcribed for analysis. Participants provided informed consent and were compensated for their time.

**Institutional Comparison Table**

	<b>Institution A</b>	<b>Institution B</b>	<b>Institution C</b>	<b>Institution D</b>
<b>Vertical integration</b>	Freshmen-Seniors	Mainly juniors through graduate students	Freshmen-Seniors	Sophomore through graduate level
<b>Multi-disciplinary</b>	Yes, including outside of engineering.	Yes, including other majors, mostly engineering, business and design.	Yes, including outside of engineering.	Yes, including outside of engineering.
<b>Multi-semester</b>	Sections are described as “teams” and span multiple semesters. Projects can span semesters. Students can participate multiple semesters (up to all 4 years) to fulfill major requirements or	Two semester capstone projects. Required for some majors.	Sections are described as “companies”. Projects can span semesters or years. Can participate multiple semesters or years to earn minor, concentration, or fulfill capstone design. Elective.	Projects designed to be one semester, though projects can carry on longer. All undergraduate students at the university are required to participate two semesters as part of general education requirements.

	capstone design. Elective.			Course resources focus on project management.
<b>Orientation</b>	Service-learning. Human services, access and abilities, education and outreach, the environment.	Capstone Engineering Design focus including business and industrial design issues. Focus on developing entrepreneurial mind set.	Business, products and services. “work like companies.”	Several. Some are specifically for business (business planning and venture analysis), some focus on sustainability, some are service-learning.
<b>Clients</b>	Local and global community organizations; university service and outreach units.	Mostly industry sponsors. Companies, local start-ups, student start-ups.	Primarily industry-sponsored projects, communities, government organizations.	Corporate and community partners; students, faculty, alumni, and university organizations can propose project topics.
<b>Design</b>	Human-centered design process.	Product development process.	Introduced through various course modules. Course document focuses on management or governance.	Project, not design, focused, for most projects.

The interview protocol was designed to engage both individual and team considerations as the participants described their experiences on their project teams. The semi-structured interview protocol was developed to probe team and individual decision-making, individual design and ethical reasoning, and general team process. Within these general areas, specific questions focused on the individual’s perceptions of their role on the team, interactions among the team members, how problems were resolved, how they view their team’s purpose and priorities, and questions probing team and individual perceptions of ethical issues that may have arisen over the course of the projects. Because of the emphases on team processes and decision-making, questions about leadership roles, practices, and outcomes were embedded throughout the protocol, mostly in the form of secondary or probing questions based on the research participants’ responses to primary questions.

Some examples of these primary or guiding interview protocol questions were:

- How would you characterize your team interactions as a whole?
- What is important to or valued by your team? What are your team’s priorities? How do you believe those priorities came to be valued by your team?

- What is your role on the team? Do you feel like you belong? Are your viewpoints listened to?
- How and when are decisions made by your team? Who was involved in those decisions?
- Do you feel as though any of these decisions or your team work involved ethical considerations?
- How do you define ethics? How do you make ethical decisions?
- Does your team seem concerned about professional codes and/or rules/laws?
- Does your team share a common understanding of “right and wrong”?

Participants’ responses to the interview questions were transcribed and de-identified, and these provided the text for analysis. The researchers conducted a discourse analysis of these texts guided by the principles of discursive psychology. In examining the text of the data set as a whole, the researchers conducted open coding to note passages that evidenced the interpretative repertoire offered by various Discourses in the form of familiar arguments, terminology, metaphors, themes, imagery, and various linguistic devices, and analyzed the way in which the participants draw upon them in order to describe, explain, or justify their statements and descriptions of both their personal identity and their relation with the project. Through this method, the researchers focused on the text of these interviews to see how the participants use characterizations and evaluative expressions to attribute identity and motive to themselves and others, how they construct their own character as well as the character of their fellow team members, how they counter and re-specify others’ descriptions of their or their team’s identity, and how psychological themes are handled and managed implicitly through discursive practices.<sup>20</sup>

By relying on the principles of discursive psychology, this analysis examines discourse on two levels, enabling the researcher to examine both the discursive practices of the participants as well as the relation of those practices to their respective programs. We examine both the individual discursive practices of the participants, as well as identifying commonalities within each program that contribute to the development of specific characteristics unique to each program.

## **Findings**

The analysis revealed interesting ways the participants discursively construct leadership through their descriptions of their team interactions. This analysis found that across the interviews, participants struggled with the nature of leadership as appointed versus emergent, and discursively constructed the salient qualities of what they perceive to represent leadership. Although all four institutions employed different methods for determining leadership on the project teams, participants across the interviews seemed to indicate similar perspectives about how they experience and perceive leadership on their teams.

### ***Appointed versus Emergent Leadership***

In many of the project teams, a team leader was appointed through a variety of methods. Some were elected, some volunteered, and some were selected by program authority figures, such as

professors and advisors of the projects. Across the interviews, participants' descriptions of their team interactions revealed a contradiction between the "formal" or appointed leader and the person who was described by participants to be informally perceived by team members as their leader.

Frequently, acceptance of an appointed leader occurred when that leader had an authoritarian style and was able to engage in task leadership. This is demonstrated by one participant describing his team's leader: "Well, basically, the leader is Sara. She pretty much organizes everything. She does the majority of, delegating work, I guess. Like each meeting we'll come, she'll sort of say what we have to get done. She'll ask like what people are willing to do this, like different tasks." Sara is described as "making all the top-level decisions" and determining "what's important" for the group.

This approach aligns with the situational view of leadership, in which teams with highly structured goals in a high-stress situation will tend toward a more authoritarian style of leadership. Sara's team was under pressure to finish an aspect of their project on a short timeframe, so members wanted to simply be told their role and go complete it. The participant described the process of making decisions in this group, saying: "everyone says, 'OK. How should we do this?' Sara will say, 'We need two people doing this job, we need two people doing that job, we need two people doing this job,' and people just step up."

Participants from Institution C were most accepting of an appointed leader's legitimate authority, although their descriptions of decision-making processes seem to contradict this acceptance. Many of these participants, when asked how their group leader came to be the leader, responded by explaining that the program's professors selected that person, or offering the credentials or identifying the particular expertise of the person. Explanations offered included, "he's taken the relevant courses," "it's based on the experience that he had," or offering the person's major or relevant professional experience. The other common way team leaders assumed their roles was volunteering. Participants said things like "no one else wanted to do it," or "she just raised her hand."

These descriptions indicate that these are the qualities these participants see as relevant and important to the performance of leadership. However, even when leadership is formalized or appointed, the majority of the participants indicated that someone other than the appointed leader was truly perceived as the leader, especially where intellectual contributions to the direction of the project were concerned. This difference between the acknowledged and appointed leader aligns with the situational perspective of leadership, in which there is less uncertainty but also less structured goals- the team needs room for creativity and open engagement, so it would tend toward a more democratic, participative style of leadership.

One participant from Institution D discussed group decision-making experiences and the influence of one member who was the "formal" leader, but two other team members were doing the "real" work of leading the team, which she constructed through a metaphor of a wolf pack:

I: OK, yeah. So how does that work, though? Because I thought Daisy was like the wolf pack leader.



R: Well, yeah, that's the funny thing, because, it's like, I don't really want to say she's really the wolf pack leader; she was just assigned to be the wolf pack leader.

When asked how this came to be, the participant indicated that Daisy had volunteered and others had shown little interest in leadership. However, she described two team members in particular as always at the center of decision-making and clearly the holders of authority on the team.

Even though it is clearly evident throughout the analysis of the explanations and descriptions offered in these interviews, the emergent nature of leadership seemed elusive to the participants. Individuals would either identify a specific person as their team's leader, or else claim that their team has no leader and every member has an equal role in guiding team decisions. When asked how their team made decisions, many participants described a very democratic style of decision-making in which each member has a voice, all opinions are respected, and the group makes decisions together. When the interviewer probed further about these experiences, many participants acknowledged that a specific team member often took on a task leadership role, particularly coordinating and elaboration behaviors. Participants from some teams indicated that no leader was ever formally recognized, yet in their talk they indicated that in decision-making situations, most members deferred to a specific member as the main authority or "driving force" for their team. One participant made this case particularly strongly, saying: "Nobody is like a definite leader, even when they're a leader. Any one at any point can very easily just be like, 'I object. I think it should be this way.' So, whenever we make decisions, it's always kind of like a democratic system where the majority will win." The interviewer asked if each member participated equally in the decision making very time, and immediately the participant indicated that certain people do dominate the decision-making process depending on what the issue is and the members' level of expertise. "We'll value their opinions more when we're voting," he concludes.

Although participants often failed to formally recognize the fluidity of leadership, analysis of their talk revealed that participants were frequently constructing different members of their team as assuming leadership roles. In their talk, the participants identified salient qualities that seemed to be associated with their descriptions of leadership.

### *Salient Qualities of a Leader*

Throughout the interviews, participants constructed what they perceived to be salient qualities of a leader. Across all four institutions, several themes emerged from the participants' talk that contribute to an image of what a leader looks like and how he or she behaves. The two major discursive constructions of leaders participants described throughout the interviews were the construction of expertise and the influence of interpersonal attraction.

### *Construction of Expertise*

Expertise was constructed in relation to a variety of factors, with the two major factors being longevity with the program or project and possession of certain skills. Participants who sought to position certain members of their project team as leaders based on these two factors drew from a Discourse of Expertise to construct those people as assuming or embodying a leadership role.

Descriptions that constructed expertise as tied to longevity with the project or program included the number of years a person has been with the project, the person's year in school (students who were farther along, even if in an unrelated field, were often deferred to as leaders), and major, especially if a major was more relevant to the team's project. In their descriptions of team interactions, such individuals were frequently constructed as having more credibility and greater expertise, regardless of whether those perceptions seemed to hold true in practice. Additionally, persons with the status of being a returning member to a certain project or even on different projects within the program were frequently described as having more skills and experience, regardless of the person's true credentials.

The possession of certain skills was the other major way participants constructed a specific person as a team's leader. This theme was extremely prevalent throughout all of the interviews, although to a varying extent. One participant who was the appointed group leader for his team responded to a question about his team members' perceptions of him as their leader: "I feel as though the team respects my opinion in most regards, and in particular because we are doing an IOS app, you can only develop that on an Apple computer, and I am the only one that likes Apple computers." Here this participant constructs his credibility in terms of his familiarity with the technology required for this project. He not only describes this technical skill as qualification for his role as a leader, but even constructs his team's respect for him as contingent on it. In descriptions constructing leadership as the possession of certain skills, we see a clear illustration of the fluid nature of leadership as it is experienced in these project teams. Even if a participant has identified a specific person as his or her team's leader, they describe experiences where different people acted as the guiding influence or were deferred to as a result of their particular skill. This discursive move is exemplified in an explanation offered by a student at Institution B when asked who leads decision-making experiences in his team:

If we're talking about something like the computer-aided design parts, Jon and Meggie's opinions, of course, will dominate; they will have a higher weight because actually they're doing it, they know what they're talking about. To be very honest, I don't, Shawn and Charity don't, so their opinions, of course, are more important. So we'll value whoever has the most knowledge of the area.

For this participant, he says the team should and does defer to the member or members who have the most skill with or familiarity with certain relevant technical elements of the design process, and that person then leads the decision-making process.

Another participant from Institution B describes the fluid nature of leadership as she describes how tasks are delegated within the team:

Last semester we kinda broke up and assigned roles to different people, and then one person is essentially the captain or the team leader of the team, and they're kind of in charge of making sure everyone is staying on task, and they're the ones that kind of compile the reports when it comes to that time... But as we go through it, people kinda step up at different times and take over specific challenges at that point maybe they're more fond of or more knowledgeable about. So the leadership kind of fluctuates as we go, but we all always come back together and make sure we're all aiming for the same

goal and on the same path. So it works out well.

This participant captures the role development element of emergent leadership, positioning her fellow team members as proactively “stepping up” and taking charge of the project as their certain skills align with the project’s current direction. She also allows for team members’ interests to influence their emergence as leaders. Her description also hints at the different conceptions of what leadership looks like on a project team. In her initial description of the role of the person designated as the “captain,” she describes task leadership behaviors of initiating and coordinating- essentially, keeping the group moving toward its goal and keeping things in order. Then, when she describes how other members “step up” into a temporary leadership role, it is positioned as a function of the skills and knowledge that person has which enable him or her to “lead” the group.

Additionally, some of these leaders were constructed by participants as the team’s leader because of perceived experience or possession of certain skills, but further analysis of descriptions of team interactions reveals a tension between that construction and the participant’s description of the team’s interactions. While one person was identified by participants as the team’s formal or informal leader, their descriptions of team interactions painted an image of another person performing the behaviors that are associated with leadership. For example, Daniel was the only returning member on a team of four at Institution A. Their project involved making a mechanical horse for children to sit on to be used in physical therapy treatments. All four members of this team identified him as the leader in their interviews, citing his experience having been with the project in previous semesters and also his knowledge of the program initially. The participants constructed him as a “teacher,” “mentor,” and someone they went to when there was uncertainty about the project or the program itself. However, as the semester progressed and the other three members began to feel confident and capable with the project, they described the decision-making process as much more democratic and participative, and two members offered several stories contradicting their belief that Daniel was the team’s highest authority. One member, Tara, had ridden horses all her life, and eventually reframed herself as the “expert” in team interactions and decision-making. Although she continued to refer to Daniel as the group’s leader and mentor, Tara described a shift in her own mentality when she realized she had unique knowledge that no other member of her team possessed: “I was like, ‘OK.’ So that’s when I kind of stepped up, I suppose, and I was showing them pictures and I was explaining that you have a western saddle here, this is going to be too heavy, this frame is too wide, it won’t turn as well. And I think that’s kind of, I suppose, when they saw me as more of like this horse figure and that I had more of this knowledge.” Although she never directly describes herself as assuming a role of leadership, Tara’s language in this passage and throughout the interview after describing this experience shifted, and she began to subtly construct herself as the authority of the team for the project. She called herself the “horse figure” and “horse expert,” which allowed her to acknowledge her role as a central authority on the project while carefully avoiding constructing herself as the team’s formal leader. She described experiences where the other members checked with her before making a design decision, offering both a technical perspective for making their product realistic and usable with her extensive experience riding horses, as well as contextual guidance to help the other team members understand the context of this type of therapy.

### *Influence of Interpersonal Attraction*

Finally, some participants who attempted to describe the person they saw as their team's leader struggled to explain why that person was seen as a leader or how he or she behaved as one. In these cases, a Discourse of Personal Attraction became evident, with participants constructing the person in ambiguous but pleasing terms and often identifying process leadership behaviors that make the group atmosphere more pleasant. Phrases such as "he's just good with people" and "she's just got one of those personalities" are used to describe the characteristics that make the person a leader in the participant's view. Additionally, participants drew from this Discourse to position the leader as the most "likable" or able to "get along" with everyone. This discursive move is demonstrated in the description of a participant from Institution B as he describes what he perceives to be his leadership style:

Everyone's been really—like, I mean, I try to keep myself very, very personable with everyone, you know. So I'm usually one of the first ones to be joking around with someone else, and we have a very—I mean, it's very—we have a very charismatic nature that we operate on.

In this example, the participant draws from the Discourse of Interpersonal Attraction in an attempt to describe the intangible elements that he sees as related to leadership. He describes his leadership behaviors in terms of encouraging and being "personable." He focuses on his contributions to the interpersonal, relational elements of the team process as a means of justifying his leadership abilities.

Another participant from Institution A described her team's leader similarly, saying: "there wasn't an organized, like, vote for her. She's just got one of those personalities she likes to be in charge, she's very good at organizing people and tasks, so it sort of just worked itself out." Here we see this participant emerging into the role of the team's leader because of her personality, and the competence with which she keeps the group on task. She concludes that "it just worked itself out," summarizing the process of this person emerging as the team's leader.

A participant from Institution D was asked why she thinks her team listens to the two people she describes as their leader: "I listen to them because, um, I kinda know Antwon a little bit, and he kinda like is really focused on what needs to get done...and just because he just can walk the walk and talk the talk." She described him in terms of process leadership behaviors, indicating that he often served a gatekeeping role, helping members to participate, and also that he frequently acted to relieve the tension within the group. In comparison to the person who was appointed as this team's leader, the participant describes Antwon as someone who will openly listen to ideas, gently respond to ones that may not be effective, and smooth over any conflict that arose. She appealed to her familiarity with him and their compatibility, saying she "kinda knows" him and shares interests in common with him, which she then positions as relevant criteria for his credibility and capability.

### **Conclusion, Limitations and Future Directions for Research**

This paper examined the talk of students in multidisciplinary project teams to examine how they understand and experience leadership. By utilizing a communicative approach to leadership, we were able to examine the emergent nature of leadership on such teams, illustrating that leadership is a fluid and changing construct that is enacted and handled discursively through team member discussions and interactions. Analysis illuminated qualities participants associate with their notion of what leadership looks like to provide insight into what leadership means to the team members themselves.

While this study offers much needed insight into the fluid nature of leadership in these teams, a discursive approach enables the researchers to examine the participants' language only. It would be useful to conduct observations or utilize a self-report measure to probe more deeply what happens *in practice* and how the students perceive leadership. Future research should continue to conceptualize leadership as fluid and emergent, and should approach a discursive lens to examine the communicative and interactional basis for leadership on teams. Additionally, future research could contribute to this line of inquiry by following project teams to their completion to see how leadership styles and the communicative behaviors associated with leadership affect the project team's performance, effectiveness in achieving the group's desired goals, and satisfaction or experiences of team members.

### **Acknowledgement**

This work was made possible by a grant from the National Science Foundation (DUE-112374). Any opinions, findings, and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the National Science Foundation.

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