Chapter 4
Who is on the Team? Exploring the Diverse Characteristics of Collaborative Teams

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Abstract The development of relationships between individual team members is critical to effective collaboration. Whether you are a person who considers themselves a team member or a team facilitator, the development of quality relationships influences the extent to which the shared goals of the project are achieved by the team. It is important to intentionally facilitate the emergence and growth of relationships using a variety of processes whereby team members can learn more about each other's characteristics—behavioral styles, approaches to research, motivational drivers, world views, values, talents, and interests. The extent to which these characteristics are explored will be dependent on the context/complexity of the project and the extent to which team members have worked with each other in the past (i.e., team history). This chapter focuses on the importance of accounting for the compositional characteristics of team members—e.g., behavior patterns, motivational drivers, personality, dispositions, demographics, cultural heritage, etc.—as an inherent part of the collaborative process. Learning to respect, manage, and navigate the differences in these characteristics in your specific context is important to team development and its long-term effectiveness.

Keywords Collaboration · Dispositions · Surface-level characteristics · Deep-level characteristics · Cognitive and disciplinary characteristics · Personal characteristics

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CTeAM Connections
- Who makes up the team?
  (Individually/Collectively).
  - How do you get them there?
  (Methods/Strategies)

4.1 Introduction

Solutions to complex societal issues requires collaboration, which, in turn, requires building trusting relationships among people from very diverse academic and non-academic backgrounds, areas and levels of expertise, cultural perspectives, personal characteristics, among others. Effective collaboration leads to the development of an environment in which thinking together, sharing of knowledge, convergence of expertise, capacity to create and innovate, and psychological safety exists (e.g., [1–5]). This environment leads to the development of a "learning organization" [5]. A learning organization within which crossdisciplinary collaboration thrives requires individual members to effectively manage their relationships with others who have different disciplinary knowledge, expertise, and ways of knowing (epistemological frameworks).

Factors and team processes that lead to effective collaboration and teamwork have been summarized in many models and conceptual frameworks [6–11]. Managing relationships among compositionally diverse individuals—e.g., age, dispositions, world views, competencies, cultural heritage, etc.—requires effective process-oriented mechanisms to blend team members together [8, 9].

4.2 Goals

The goals of this chapter are to:

- provide background about compositional features of team members; and
- introduce approaches and strategies for learning about team members.

4.3 Background

This chapter seeks to provide approaches and strategies to address the core question: "who are the people that make up the team?" of the Collaborative Team Action Model (CTEaM). Knowing more about the details of "who" is on team is important to all team members because it will lead to better team function and output. Many attributes contribute to who a person is (Figs. 4.1, 4.2). A person's culture (Fig. 4.1) along with their personal characteristics (Fig. 4.2) influences how they interact, communicate, and develop relationships with other people. Three general compositional categories—surface-level, deep-level, cognitive and disciplinary—provide a general framework for characterizing the range of personal attributes that people bring to a team [12–15]. Volumes have been written about these attributes. This chapter's intention is to increase awareness of their potential influence on your team.

Surface-level features are observable and of which we are conscious or aware. A person's behavioral patterns and tendencies (i.e., characteristics) consist of their actions and reactions (responses). They can be observed, recorded, and measured. These characteristics are their manner of doing things some of which are natural and inherent to them while others come from their upbringing, social, and cultural experiences. Easily observable characteristics such as a person's race, gender, age, or ethnicity can lead to implicit bias that influences judgments, decisions, and behaviors towards others. A person's responses show up in how they act and how they interact with others. Body language, tone of voice, rate of speaking, how they listen, introversion or extroversion, directness or indirectness of verbal communication, punctuality, among others, are examples of observable behavioral characteristics. Recognition of behavioral tendencies and implicit bias leads to opportunities to control them. A

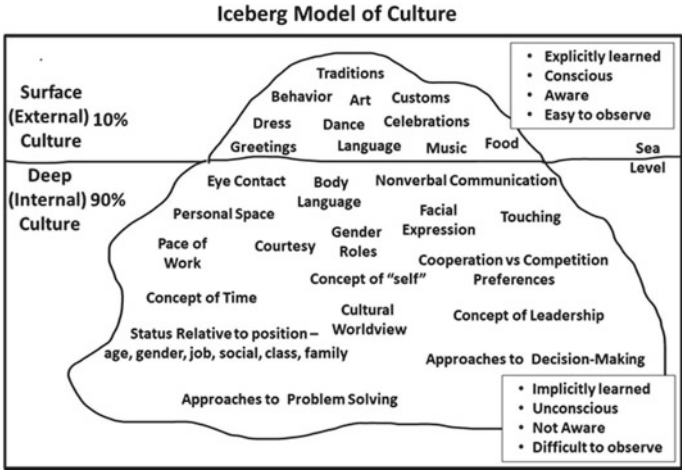

Fig. 4.1 Iceberg of cultural characteristics. See text for details

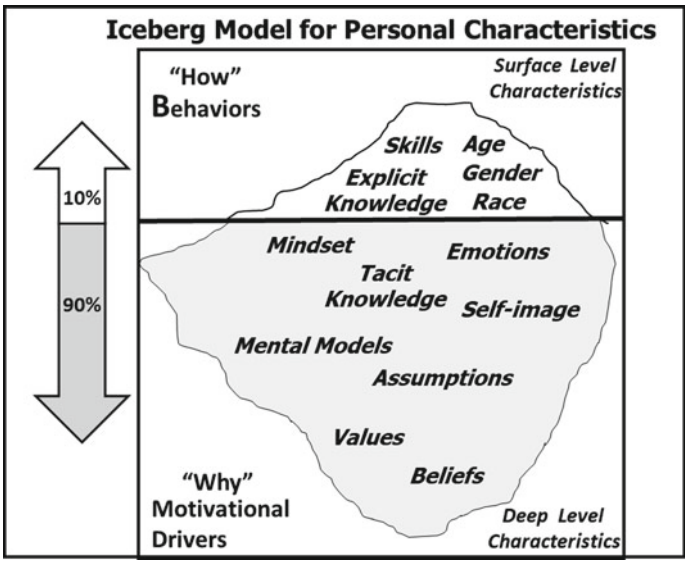

Fig. 4.2 Iceberg model for personal characteristics. See text of details. Modified from [16]

heightened awareness that behavioral tendencies are different from one person to another creates opportunities to modify behavior so differences can be navigated and negotiated.

Deep-level attributes include individual psychological constructs such as values, attitudes, preferences, beliefs, worldviews, and assumptions [14]. These not so readily observable characteristics are forms of tacit knowledge which are resident within the mind and perceptions of individuals [17, 18]. Gosselin et al. [16] refers to these characteristics collectively as motivational drivers in that they are the "why behind the how and what we do". Motivational drivers are those things about which a person is passionate, perceive as important, and/or are the values that provide purpose and direction in their life. These drivers strongly influence the way individuals look at life, their mindsets, their decisions, and their behavioral characteristics. Diversity in motivational drivers can lead to knowledge and social gaps between individuals that can reduce team effectiveness [19].

Each person brings different expertise, disciplinary and cognitive backgrounds, levels of knowledge, ways of knowing, project language, and mental models about the issue to the team. These differences yield distinct perspectives regarding assumptions, strategies, and beliefs related to such things as the use of quantitative and qualitative data, the methods for collecting data, importance of stakeholder engagement, and motivations for research (e.g., community benefit or intellectual curiosity). Although bringing different perspectives together is the point of collaboration, failure to understand them can strongly influence the development of effective communication and the trust necessary for building the relationships necessary for successful collaboration [20–23].

4.4 Approach

Team Exploration Factors: Learning about the surface-level, deep-level, cognitive and disciplinary characteristics of other team members is commonly assumed to develop organically as people interact over time. Although this is true to a certain degree, the importance of these characteristics to the evolution of relationships necessary for collaboration supports the basic premise that some level of intentionality be placed on learning about and exploring the characteristics of team members. It is too easy to just skip over and neglect these characteristics. The extent to which a team wants or needs to explore is dependent on a number of factors, that include, but are not limited to:

1. Team Formation—Teams form in a variety of ways. Members may volunteer in response to a call for participants. A facilitation group may seek out participants based on their disciplinary knowledge in the case of academic teams, areas of expertise in non-academic settings, and/or availability and accessibility. Both these approaches are certainly reasonable places to start, but the resulting group will be highly heterogenous.
2. Team Function—The extent to which a team is going to operate in a collaborative way whereby parity among participants and development of a shared vision are important will influence the level of relationship building necessary.
3. Team History—In the case where team members have a history of working together, they will be in a place where these characteristics have been explored to varying degrees. They understand one another's tendencies. However, when new people are added to the group or a new group is formed, an investment of time to explore these characteristics in the context of the project will be beneficial.
4. Team Duration—how long will the team work together on the project?

Self-Knowledge: Regardless of the team status in terms of formation, function, history, and duration, the person on your team that you should be most concerned about knowing is yourself. To maximize your impact on the team, you must know who you are [24]. Research suggests that we make sounder decisions, are more creative, more confident, build stronger relationships, and communicate more effectively when we see ourselves clearly [25]. The Gallup organization has documented the importance of self-knowledge and having an acute knowledge of your strengths as important to being an effective leader [26]. Self-knowledge requires the recognition of our patterns and tendencies that manifest themselves in our surface level characteristics related to how we interact, communicate, and develop relationships with other people.

Know Your Team: A significant challenge above and beyond learning and improving knowledge of self is integrating this information with that from the people with whom you are collaborating to create a psychologically safe environment. An important first step to addressing these challenges is to recognize that each team member including yourself has a set of surface- and deep-level characteristics, none of which are necessarily good or bad. They are just different.

Once these differences are acknowledged, the next step is to be intentional about learning about other team members and questioning our assumptions. Communication is key. O'Rourke provides an excellent overview of the practice of communication [23]. Assuming how others think and feel, why they act the way they do reduces the listening a person does and, therefore, effectively reduces communication and increases opportunities for misunderstanding. Assumptions can be the beginning of the end of the relationships necessary to build quality collaborations.

During interactions with students, employees, colleagues, community volunteers, assumptions inadvertently arise when a person focuses on phrases such as—when I was their age, when I was in school, when I got my first job… when I was part of this research team… We did this. Or we did that. Or this or that worked for me. Or we would have never done that. These statements are based on the "It worked for me so it should work for them" assumption. All these statements reflect an inward-looking focus. They illustrate the power of personal experience in shaping our views and assumptions and the importance of questioning the extent to which personal experience is representative.

The "First an Expert" assumption often occurs in the world of higher education. It manifests itself in the following way. If you have a Ph.D. and have research-based expertise in a given discipline, then you will be an effective teacher, an effective academic leader, and/or an effective communicator about your expertise in the community. An interesting corollary in the coaching world is that if you played the game at a high level, then you will be a good coach. These assumptions can result in people getting put into positions for which they have not been trained or do not have the required expertise.

Another source of assumptions is related to cultural differences. Culture is the "shared patterns of behaviors and interactions, cognitive constructs, and affective understanding that are learned through a process of socialization. These shared patterns identify the members of a culture group while also distinguishing those of another group" [27]. Culture includes the knowledge, language, religion, cuisine, social habits, music, and arts of a particular group of people [28]. We are all part of a culture. Whenever we interact with a new person or group of people, we are interacting with one or more new cultures. The cultural lens through which we view other people focuses on the surface/external level cultural attributes that we can see, the 10% (Fig. 4.1), because the brain processes these visual attributes in the context of keeping us physically and emotionally safe. This may lead to unconscious assumptions (i.e., implicit bias) about another person or group of people based on easily visible attributes. These early time assumptions do not consider the significant influence that the more difficult to observe deep-level cultural components have on the person's surface-level characteristics.

4.5 Strategies

The ability of a person to understand their characteristics at a level where they know what they want to do and why they want to do it, is a challenging task that each individual faces during their journey to becoming an effective collaborator, teammate, and leader [24]. Continually asking questions to focus and learn more about ourselves and the people with whom we work are at the forefront of the strategies provided. Asking questions moves us past assumptions that can create problems for teams at a variety of levels. Recognition that each team member including yourself has a set of surface- and deep-level characteristics that need to be explored is a good first step towards effectively blending team members. In the remainder of this chapter, various strategies are provided to explore some of the key characteristics—individually as well as collectively.

4.6 Self-Knowledge

> Knowing yourself is the beginning of all wisdom.—Aristotle.

4.6.1 Surface- and Deep-Level Characteristics: Self-Reflection Methods

Volumes have been written about reflection. It is defined as "the conscious examination of past experiences, thoughts, and ways of doing things. Its goal is to learn about oneself and the situation, and to bring meaning to it in order to inform the present and the future. It challenges the status quo of practice, thoughts, and assumptions and may therefore inform our decisions, actions, attitudes, beliefs, and understanding about ourselves" [29].

Self-reflection methods seek to maintain a positive self-view so that a person can receive critical feedback from themselves. Self-knowledge sometimes requires confronting things that are uncomfortable, or things that don't feel so good. We need to be willing to ask ourselves, "What can I do better?", "What are some of the worst things about myself?". We need to be willing to listen to the answers and grow from them. People need to accept that they may not be as great as they think they are. Continuously challenge what you think you know and why you do what you do.

Reflection is a process that allows a person to link experiences so that they become more aware of their own knowledge and actions and evaluate them relevant to their values. The purpose of the process is to improve self-knowledge—in terms of what you do (practice) and why you do it. Development of knowledge, skills, and abilities to reflect will improve performance.

Table 4.1 Examples of self-reflection activities

Type	Brief description
Reflect on experience	**What? So what? Now what?** Driscoll [30]
	'What?' helps you describe the situation you want to learn from. You should identify the facts and feelings of the situation
	'So What?' allows you to extract the meaning of 'What?'. Moreover, you should question what knowledge you and others had in the situation, and what knowledge or theories could help you make sense of the situation
	'Now what?' allows you to create an action plan based on the previous questions
Reflect for self-awareness	**Self-Questioning**
	What is one of my strengths/weaknesses?
	How do I know?
	What does evidence do I have for this practice? (For example, if a strength is being conscientious, maybe you are always on time, or meet deadlines.)
	What other strengths/weaknesses may contribute to the abilities? (For example, the strength 'meet deadline' may come from being organized and committed)
Reflect on personal values	**Live Your Core Values: 10-min Exercise to Increase Your Success** [31]
Reflect on personal values	Discuss with colleagues: Share with a colleague and gain others' perspectives regarding what you value and the source of your values? How do you prefer to be communicated with? One of the most common mechanisms for making sense of your own as well as others deep-level characteristics are person-to-person interactions using stories, analogies, metaphors, and discussion [17]
General resource on reflection	Reflection toolkit: https://www.ed.ac.uk/reflection

Tables 4.1 and 4.2 provide examples that may assist you in reflecting on yourself. The reader is referred to the website under general resource on reflection for an extensive review of the literature.

4.6.2 Surface- and Deep-Level Characteristics: Assessment Instrument Methods

The process of self-reflection can be aided by the use of assessment instruments. These instruments can assist an individual in the articulation of tacit knowledge (Fig. 4.2, i.e., knowledge, skills, and abilities that are difficult to put into words) into more explicit knowledge. That is, knowledge that can be more straightforwardly expressed, reflected upon, and shared between people. Assessments are not 100%

Table 4.2 What are your motivational drivers? How do they drive your actions?

Instructions: Listed below are values			
1. Read through the list. When you find a value that describes you, circle it			
2. Select your top 10. Assess the values you circled and choose your top ten			
3. Connect actions to values. Describe how these 10 values influence your actions, especially as they relate to your work with the group			
4. Share with a colleague and gain others' perspectives regarding what you value and the source of your values?			
ACCEPTANCE	DUTY	INNER PEACE	RESPONSIBILITY
To be accepted as I am	To carry out my duties and responsibilities	To experience personal peace	To make and carry out important decisions
ACCURACY	ECOLOGY	INTIMACY	RISK
To be correct in my opinions and actions	To live in harmony with and protect the environment	To share my innermost experience with others	To take risks and chances
ACHIEVEMENT	FAME	JUSTCE	ROMANCE
To accomplish and achieve	To be known and recognized	To promote equal and fair treatment for all	To have intense, exciting love in my life
ADVENTURE	FAMILY	KNOWLEDGE	SAFETY
To have new and exciting experiences	To have a happy, loving family	To learn and possess valuable knowledge	To be safe and secure
ATTRACTIVENESS	FLEXIBILITY	LEISURE	SELF-ACCEPTANCE
To be physically attractive	To adjust to new or unusual situations easily	To make time to relax and enjoy	To like myself as I am
AUTHORITY	FORGIVENESS	LOGIC	SELF-CONTROL
To be in charge of others	To be forgiving of others	To live rationally and sensibly	To be self-disciplined and govern my own activities
AUTONOMY	FRIENDS	LOVED	SELF-ESTEEM
To be self-determining and independent	To have close, supportive friends	To be loved by those close to me	To feel positive about myself
BEAUTY	FUN	LOVING	SELF-KNOWLEDGE
To appreciate beauty around us	To play and have fun	To give love to others	To have a deep, honest understanding of myself
CARING	GENEROSITY	MASTERY	SERVICE
To take care of others	To give what I have to others	To be competent in my everyday activities	To be of service to others
COMFORT	GENUINENESS	MODERATION	SEXUALITY

(continued)

Table 4.2 (continued)

To have a pleasant, enjoyable life	To behave in a manner that is true to who I am	To avoid excess and find a middle ground	To have an active and satisfying sex life
COMMITMENT	GOD'S WILL	MONOGAMY	SIMPLICITY
To make a long-lasting and deep commitment to another person	To seek and obey the will of God	To have one close, loving relationship	To live life simply, with minimal needs
COMPASSION	GROWTH	ORDERLINESS	SPIRITUALITY
To feel and show concern for others	To keep changing and growing	To have a life that is well-ordered and organized	To grow spiritually
COMPLEXITY	HEALTH	PLEASURE	STABILITY
To have a life full of variety and change	To be physically well and healthy	To have experiences that feel good	To have a life that stays fairly consistent
CONTRIBUTION	HELPFULNESS	POPULARITY	STRENGTH
To make a contribution that will last after I am gone	To be helpful to others	To be well-liked by many people	To be physically strong
COURTESY	HONESTY	POWER	TOLERANCE
To be polite and considerate to others	To be truthful and genuine	To have control over others	To accept and respect those different from me
CREATIVITY	HUMILITY	PURPOSE	VIRTURE
To have new and original ideas	To be modest and unassuming	To have meaning and direction in life	To live a morally pure and excellent life
DEPENDABILITY	HUMOR	REALISM	WEALTH
To be reliable and trustworthy	To see the humorous side of myself and the world	To see and act realistically and practically	To have plenty of money
	INDEPENDENCE		
	To be free from depending on others		
	INDUSTRY		
	To work hard and well at my life tasks		

Modified from Miller and C'de Baca [32] Values Card Sort. Unpublished manuscript: University of New Mexico. www.winona.edu/resilience updated 11/16/16 who adapted it from: Hayes [33]. Strength spotting card sort. http://thrivingadolescent.com/2016/01/19/strength-spotting-card-sort-free-download/

accurate. Their value lies in that they are tools that provide a common language. They are a starting point for self-reflection regarding the ways individuals think, act, react, respond, learn, and communicate with others. A basic premise behind the use of any of these tools is that through knowledge of individual characteristics and those of collaborators, relationships, communication, and trust will grow (e.g., [24, 34, 35]).

Surface-Level—Behavior Characteristics: Since the ancient Greeks, scientists, researchers, business leaders, human resource managers, among many others, have sought ways to characterize people's styles, tendencies, and patterns of behavior. As a result, there have been many assessments that have been created to characterize styles and tendencies. Behavior is influenced by both personal and environmental factors, but people also influence themselves and their environment, through their behavior. People control their behavior.

The following are examples of tools that can be used:

Example 1. The TriMetrix® HD assessment tool [36] provides a framework to explore individual as well as collective dispositional characteristics. A person's dispositional characteristics includes their behaviors and motivational drivers [37]. The DISC model is one part of the three-part TriMetrix® HD assessment. DISC assesses behavioral characteristics. Please contact the authors about accessing the assessment. The DISC results provide behavioral characteristics in terms of "how" a person carries out decisions, interprets "how" individuals relate and interact with each other, and "how" they communicate. It describes a person's behavioral style on a continuum of four primary behavioral dimensions D, I, S, and C (for details see [34]):

- D = the way an individual manages problems/challenges and exercise power;
- I = how a person interacts and uses their influence with people;
- S = a person's steadiness, which reflects how the person responds to change, variation, and pace of their environment;
- C = how an individual deals with procedures and complies with rules and other constraints that are set by others and responds to authority.

Each person operates in all four domains. The dominant style (highest score) and the least dominant styles are the primary influences on your behavior preferences. An application to a team is given below in Explore Surface-level Characteristics of Team using TTI Success Behavioral Insights Wheel®. To learn more about the TTISI DISC instruments see https://www.ttisi.com/.

Example 2. Martha Borst, a leader in effective, peak performance strategies, has developed a personality and behavioral styles inventory based on in-depth research. This assessment identifies four basic styles each having its own behavioral attributes, examples include:

- Driver = Directive—Action-oriented, produces results, unemotional, efficient, problem solver, takes charge, is direct with communication.

- Promoter = Visionary—Idea generator, optimistic, creative, spontaneous, exciting, motivator, inspirational, fun
- Supporter = Personal/relating—Listens well, helpful, caring, excellent follower, collaborator, great team player, sensitive to others, loyal
- Analyzer = Evaluating—Thorough and accurate, methodical, detailed, intelligent, persistent, inquisitive, systematic, logical, practical

As with DISC, each person operates in all four domains but has one dominant style (highest score) that indicates behavior preferences. This style most strongly influences "choices, lifestyles, communication techniques, basic human needs, how we learn, what we fear, what we like/dislike, how we think and solve problems, what we avoid, how we react to other people and circumstances and how we use our skills and abilities." The style having the second highest score also influences behaviors. More information and access to the basic personal inventory can be found at https://www.marthaborst.com/resources/assessment-tools.asp.

Deep—Level Characteristics—Motivational Drivers: Another component of the TriMetrix® HD assessment provides information about six motivational drivers based on the descriptions of [38]:

- Theoretical—a passion for learning and wanting to learn as much as they can.
- Individualistic—a drive to control their destiny and that of others as well. They have a desire for control, and recognition.
- Social—seek to give back to the community, charities, solve global social problems etc. They are generous with their time, talents, and resources.
- Utilitarian—pursue a positive return on investment of time, energy, or money. They will focus on practical results and what is useful.
- Aesthetic—seek harmonious outcomes in which life is a procession of events, each of which needs to be enjoyed for its own sake.
- Traditional—live by a certain set of standards, beliefs, or principles commonly based on family and culture.

The top two motivators are usually the two most important for an individual. In the section Explore Deep-level Characteristics of Team and Fig. 4.6, the Motivational Team Wheel illustrates the primary and secondary drivers for a set of workshop participants are plotted in the outside and inside rings, respectively, to illustrate the variability in motivational drivers.

Deep-Level Characteristics—Mindset: Dweck [39] identified two mindsets—a "growth mindset" and a "fixed mindset." Focusing on persistent effort is important for success in the boardroom, on the field, in the classroom, and beyond. The development of this type of effort comes from within. A "growth mindset" recognizes that hard work, learning, training, and perseverance lead to success. For people who have a growth mindset, individual and collective performance can always be improved, and mistakes are important opportunities from which to learn. Mistakes come from doing and so does success. People who focus on the questions of "How can I get better and what do I have to do?" are important to have on any team.

It is also useful to know who on your team has a fixed mindset. These people believe individuals are born with innate talent and ability and that these traits are fixed. These individuals typically have a fear of making mistakes because they feel it makes a negative statement about their abilities and themselves at a very personal level. They are typically risk averse in contrast to individuals who have growth mindset who are more risk tolerant. Knowing the extent to which you have a collective growth mindset set among the members of your collaborative team provides opportunities to reflect on the extent to which the team focuses on doing and improving things as well as the extent to which risks are willing to be taken. Reflective practice on mindsets can help the team maintain focus on things over which it has control, can take responsibility for its own success, assess the extent to which the group is willing to take risks, and use setbacks as motivation to improve.

IDRlabs provides the Growth Mindset Test based on Dweck's work (https://www.idrlabs.com/growth-mindset-fixed-mindset/test.php). The American Bar Association has a self-administered 16-item questionnaire and score sheet for assessing mindsets as well (https://www.americanbar.org/content/dam/aba/administrative/women/mindset-quiz.pdf).

4.6.3 Cognitive- and Disciplinary Characteristics: Toolbox Dialogue Initiative

Team members in many cases are often selected based on their disciplinary knowledge in the case of academic teams and/or areas of expertise in non-academic settings. Regardless of the selection process, it is important to communicate individual perspectives regarding assumptions, strategies, and beliefs related to such things as the use of quantitative and qualitative data, the methods for collecting data, importance of stakeholder engagement, among others. O'Rourke et al. [23] provides an important discussion about the practice of communication related to the facets of a person's cognitive and disciplinary frame of reference. This should be explored because they influence many aspects of relationship development. The Toolbox Dialogue initiative (http://tdi.msu.edu/; [20, 23] provides a framework for exploring similarities and differences in perspectives among team members. Of course, this exploration starts with the individual. Gosselin et al. [16] used an abbreviated version of the Toolbox Likert-type scale instrument (Table 4.3) in a workshop for Ph.D students learning about collaboration. This instrument assesses an individual's perceptions about the nature of reality and scientific inquiry, the tension between qualitative and quantitative approaches, the importance and type of communication, and other deeply engrained ways of thinking that can differ between disciplinary cultures and different areas of expertise. These differences can lead to communication challenges at a variety of levels.

The instrument consists of a set of elements, each comprised of a core question and probing statements that concern philosophical aspects of research (Table 4.3). Below we will discuss how this information can be used to get to know your team.

4.7 Know Your Team

4.7.1 Navigating and Negotiating Dispositional Characteristics:

A person's individual dispositional characteristics includes their motivational drivers and behaviors [37]. The concept of dispositional distance describes the differences in the dispositional characteristics among a group of team members ([16], Fig. 4.3). Learning to navigate the dispositional distances between and among team members is critical to building better relationships, developing effective communication, and producing better team outcomes. The following strategies are examples that can serve as a guide.

4.7.2 Just Like Me: A Change of Focus

Foundational to the integration of individuals into a team is a simple acknowledgement that each team member brings their own set of values, beliefs, perspectives, etc. to the group. To get started down a path of learning about others, a simple activity called "Just Like Me" used by Paul Santagata, Head of Industry at Google, can be used [40]. The following approach modified from Santagata's activity asks participants to consider the following items as they begin their work with a new group of people.

- This person has beliefs, perspectives, and opinions, just like me.
- This person has hopes, anxieties, and vulnerabilities, just like me.
- This person has friends, family, and perhaps children who love them, just like me.
- This person wants to feel respected, appreciated, and competent, just like me.
- This person wishes for peace, joy, and happiness, just like me.

This activity acknowledges that each person has needs that they want to fulfill so they can walk away with a sense of accomplishment. These statements focus on deep-level characteristics that relate to why people do what they do. After reflecting on these statements, questions that are at the forefront of learning about team members are natural outcomes and changes the focus to others on the team. These statements and related questions provide a framework for small or large group conversations and the questioning of assumptions. Sinek [41] emphasizes the importance of questioning in that it helps move people beyond their assumptions and what they think they know

Table 4.3 Core questions and probing statements from an abbreviated version of the ToolBox survey for the exploration of individual perspectives related to discipline and expertise

Responses to probing statements, use the following Likert scale:						
Disagree					Agree	
1	2	3	4	5	I don't know	N/A
Motivation**						
Core question: What motivates me to participate in environmental research?						
1. Knowledge generated by scientific research is valuable even if it has no application						
2. Good science products are more important to me than major funded projects						
3. Incorporating one's personal perspective in framing a research question is never valid						
4. Collaborative research should be motivated primarily by grant opportunities						
Methodology**						
Core question: What methods do you employ in your disciplinary research (e.g., experimental, case study, observational, modeling)?						
1. Basic and applied research are equally important for environmental science research						
2. Scientific research (applied or basic) must be hypothesis driven						
3. Qualitative science is as credible as quantitative science						
4. The methods I use in my disciplinary research are easily integrated with methods used by researchers in other disciplines						
5. Experimental work conducted in the laboratory is too dependent on context to yield general principles						
6. Modeling, fieldwork, and laboratory research are of equal importance for environmental science research						
Values**						
Core question: Do values negatively influence scientific research?						
1. Incorporating one's personal perspective in framing a research question is never legitimate						
2. Value-neutral scientific research is possible						
3. Scientists should never engage in advocacy						
4. Public outreach detracts from good science						
5. Responsible scientific research requires meeting the productivity goals of your						
6. Scientists have a moral obligation to improve society through research						
Reality**						
Core question: Do the products of scientific research more closely reflect the nature of the world or the researchers' perspective?						
1. Scientific research aims to identify facts about a world independent of the investigators						
2. Scientific claims need not represent objective reality to be useful						
3. Models invariably produce a distorted view of objective reality						
4. The subject of my research is a human construction						

Modified from [16]

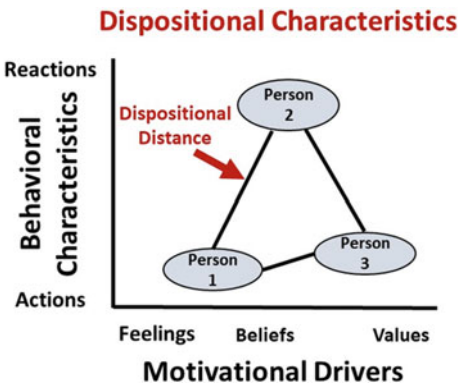

Fig. 4.3 Dispositional distance is a theoretical construct to describes the differences in the behavioral characteristics and motivational drivers of a group of team members. Modified from [16]

about others. Acknowledging these deeper needs initiates the development of trust and a win–win environment.

4.7.3 Integration of Disciplinary and Cognitive Expertise: Toolbox Dialogue Example

The objective of this strategy is to use information gathered from team members using the Toolbox Dialogue instrument in Table 4.3 as a framework for a discussion. The Likert-type scale used in this instrument encouraged participants to take a position on the probing statement as a springboard for discussion. The following example is from [16]. The responses to the instrument remain in the participant's possession and provide a framework for a minimum of a one-hour, participant-driven conversation involving all team members. One person is designated as timekeeper and reminds the group periodically about how much time remains to ensure that the conversation moves forward. It should be noted that the quality of the dialogue is paramount—not the number of prompts discussed. In most cases, there are more prompts than needed to allow for flexibility and exploration. A "talking stick" can be used to enable equitable participation by allowing only the person holding the stick to speak. Group guidelines should be established to support active listening. This conversation provides opportunities for individuals to describe and discuss their perspectives and assumptions regarding their discipline and expertise. Broadly, the topics covered include participant perceptions of the nature of reality and scientific inquiry, the tension between qualitative and quantitative approaches, the importance and type of communication, and other deeply engrained ways of thinking that can differ between disciplinary cultures and areas of expertise [20, 42]. For more on the Toolbox Dialogue initiative go to http://tdi.msu.edu/ [20, 23]. After the conversation, the group identifies what they learned from the activity about their team (See [43]).

4.7.4 Explore Surface-Level Characteristics of Team: TTI Success Behavioral Insights Wheel®

A person's interaction patterns and tendencies—behavioral characteristics—are readily observable. Figure 4.4 is an example of data from the DISC instrument described above for a soccer team plotted on the TTI Success Insights Wheel®. The wheel is divided into four quadrants based on the influence that the four primary behavioral dimensions—D, I, S, and C have on a person's overall behavioral characteristics. The stronger the dimension influences the behavior, the further the plotted point is from the center of the wheel. The wheel demonstrates the similarities and differences in behavioral characteristics among team members. It uses eight specific identifiers: conductor, persuader, promoter, relater, supporter, coordinator, analyzer, and implementer. A description of each identifier is provided in the text adjacent to it. A primary takeaway message from Fig. 4.4 is that there can be significant behavioral differences among team members on the field, classroom and the workplace. They need to be explicitly addressed because they will impact the effectiveness of the individuals and the organization. Diversity is important for a team, but differences also create challenges. Case in point, the behavioral tendencies of the two authors, one who is a conductor (#19), and the other is a coordinator (#7) (Table 4.4). The DISC instrument provides the authors with a mechanism to articulate and recognize behavior tendencies. It has heightened their awareness of how their behavioral tendencies are different. The authors have learned to navigate and negotiate the conductor's tendency to overpower, lack diplomacy, and be impatient and the coordinator's tendency to be risk averse and introverted lacking comfort verbalizing their concerns. Knowledge of these differences has contributed to their abilities to collaboratively work as a team. When used in groups, this information can create alignment and agreement among individuals. This helps build better relationships, more effective communication and produce better outcomes. For more details regarding the interpretation of the wheels, see [24, 34].

4.7.5 Explore Deep-Level Characteristics of Team: Motivational Team Wheel®

The top two motivational characteristics for a soccer team are plotted on a TTI Success Insights Motivational Team Wheel® (Fig. 4.5). Figure 4.5 presents the primary and secondary motivators for the players and coaches because it is typically the top two motivators that drive behavior. This graph illustrates that 80% of the players are driven by social concerns, that is, they thrive on: eliminating conflict and pain within the team; assisting with the needs and struggles of team members; and taking a personal interest in team members. Forty percent of the players thrive on solving team problems, identifying and systematizing team activities, and pursuing knowledge and truth. They are driven by learning.

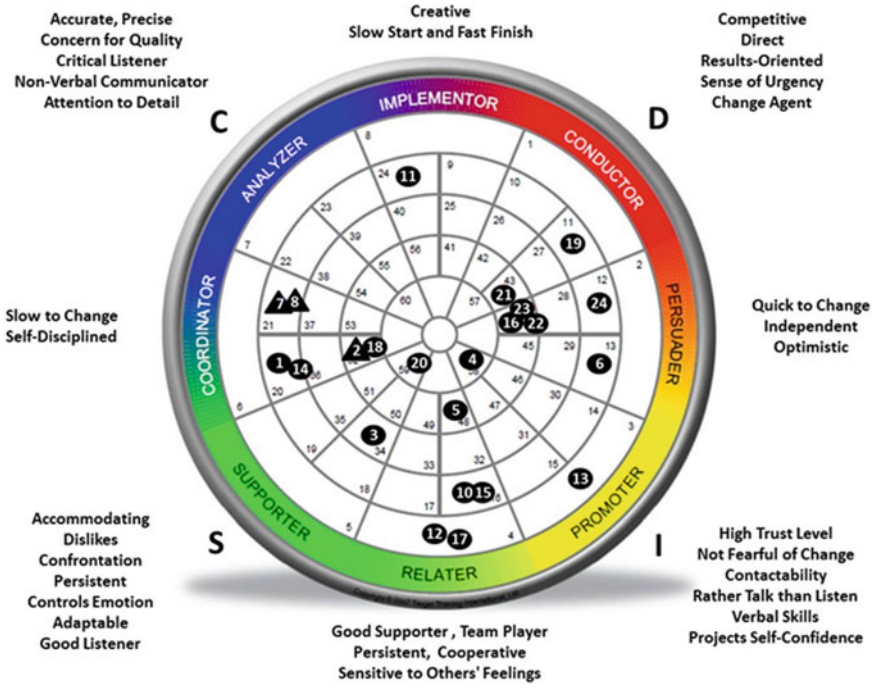

Fig. 4.4 Example of DISC behavior data presented on the TTI Success Insights Behavioral Team Wheel®. Used with permission from the author and publisher, Target Training International

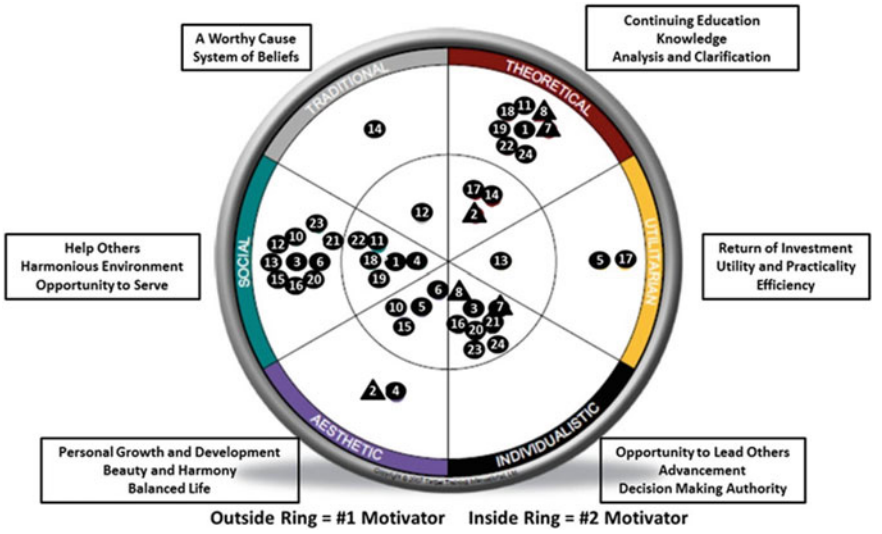

Fig. 4.5 Motivational driver data for soccer players (circles) and coaches (triangles) presented on the TTI success insights motivational team wheel. Used with permission from the author and target training international

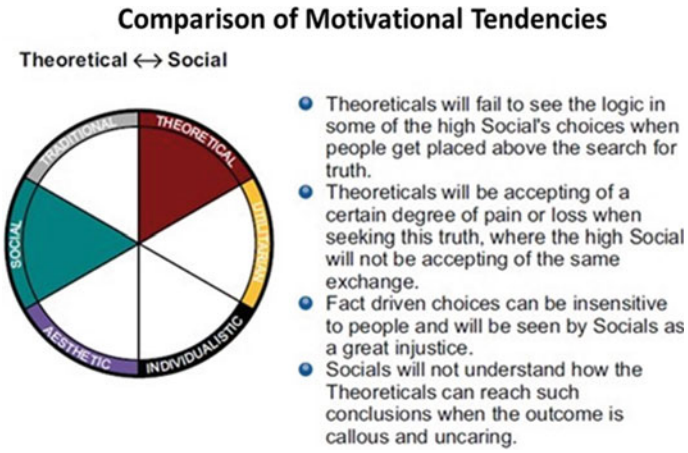

Fig. 4.6 An example of a team-blending resource from TTI that compares the motivational tendencies of people whose primary motivators are theoretical or social. Used with permission from the author and target training international

Table 4.4 Potential behavioral roadblocks between the two authors labeled 7 and 19 on the wheel in Fig. 4.4

Coordinator	Conductor
Slow pace	Quick pace
Introverted	Extroverted
Patient	Impatient
Avoids conflict	Enjoys conflict
Slow to anger	Quick to anger
Low risk	High risk
Tendencies	
Conductors tend to overpower. They must work hard to build up a trusting relationship before relaters/supporters/coordinators feel comfortable verbalizing their concerns. Conductors need to be mindful of their listening skills as well as their diplomacy	

The diversity in motivational drivers can lead to knowledge and social gaps between individuals that, in turn, can reduce team effectiveness [19]. Potential conflicts between the primary motivators of theoretical versus social can contribute to relationship problems as illustrated in Fig. 4.6. The players driven by learning and the use of facts were interpreted as being insensitive by teammates who are primarily concerned for the social well-being of the individuals and communities involved. To the aesthetic-dominated player, #15, the theoretically motivated player, #24, appeared to be a close-minded know-it-all. In addition, the secondary motivator for #15 was social that led them to have issues with those motivated by individualistic tendencies. At its most basic level, the socials have issues with the individualistic's

tendencies to place themselves above others. Using small group discussions, relationships between the players improved to the point where they began choosing to warm up with one another instead of avoiding one another. Without open discussion of the differences in driver behavioral change would not have occurred.

4.7.6 Explore Surface- and Deep-Level Characteristics of Team: Generational Differences

Whether it is business, coaching, teaching, research or community engagement, collaborative efforts will involve people who represent a continuum across the generational spectrum. A generation is "people within a delineated population who experience the same significant events within a given period of time" [44]. Much has been written about the differences between generations and the impact the differences have at different organizational scales (e.g., [45–47]). Evidence is mixed regarding the extent to which generational differences in preferences and values exist. Clearly, the current workforce consists of a continuum of ages that could exceed 60 years. As a result of their experiences, people of different ages have different lenses and filters through which they interpret the world and the people around them. This is challenging and at the same time exciting.

Marston [48] provides some examples of fundamental assumptions that may occur about different generations. Regardless of the generation, success, time, work ethic, styles and types of communication, experience with technology, and self-efficacy are valued in different ways. Early in your collaborative work, potential differences among the group related to generational differences should be explored and discussed so the skills of the multigenerational team can be effectively harnessed, and communication and relationship development can improve.

Table 4.5 provides a set of questions that can help explore generational differences among team members.

4.7.7 Explore Surface- and Deep-Level Characteristics of Team: Diversity, Equity, and Inclusion Perspectives

One of the main reasons for collaboration is to increase access to diverse ideas and perspectives to develop creative and novel approaches to solving problems. In the preceding paragraphs, the importance, exploration, understanding and integration of individual surface- and deep-level personal characteristics have been emphasized (Fig. 4.1). These characteristics are influenced by cultural setting (Fig. 4.2). It has been recognized for decades that intercultural interaction enhances creativity in the production of novel and useful ideas [49]. There are many opportunities to take advantage of the diversity in the community in an equitable and inclusive way.

Table 4.5 Example questions to explore the existence of generational differences

1. Self-perception in the world	How do you see the world in which you live?
	In 10 seconds, list words that you would use to describe your generation
	How is your generation different from others?
	How do you see yourself fitting into this team?
2. Future achievements, success, and sacrifice	What do you want to achieve in your life? Personal/professional
	What do you consider measures of your success? Long-term/short term
	To what extent are you willing to sacrifice free time, friendships, family, etc. to be successful?
3. Contributions, satisfaction, and relationships	What will you contribute to your team?
	What activities do you like to be involved in? Work/personal
	What makes you feel proud and satisfied?
	What do you value being on a team?
	What challenges do you have getting along with other people?
	How do you address these challenges?

Modified from [47]

Following the lead of [50] who focused on culturally responsive teaching, it is important to focus on understanding patterns and similarities across cultures related to collaboration. Hammond [50] refers to these patterns and similarities as archetypes. As is the case for developing culturally attuned teaching and learning environments, an archetype connected to deep-level cultural characteristics is the culture's orientation towards individualism or collectivism (Table 4.6).

Table 4.6 Characteristics of individualistic and collectivist cultures (from [50])

Individualism	Collectivism
• Focused on independence and individual achievement	• Focused interdependence and groups success
• Emphasis on self-reliance and the belief that one is supposed to take care of themselves to get ahead	• Emphasis on reliance on the collective wisdom or resources of the group and belief that group members take care of each other
• Learning happens though individual study and reading	• Learning happens through group interaction and dialogue
• Individual contributions and status are important	• Group dynamics and harmony are important
• Competitive	• Collaborative
• Technical/analytical	• Relational

An individual or group has individualistic or collectivist tendencies that exist on a continuum. Hofster et al. [51] presented the Cultural Dimensions Index that evaluated countries using a 100-point scale in which a high score indicates more individualistic tendencies, and lower scores indicate more collectivistic tendencies. In the U.S., and most European countries, cultures have roots in an individualistic culture. Whereas Latin American, Asian, African, and Middle Eastern cultures have a collectivist orientation. There is no question this is an oversimplified perspective and could certainly lead to stereotypes. However, it highlights the importance of learning about other members of your team in the context of the deep level characteristics of culture—values and worldviews, considering how these may influence interactions among team members, and resisting the tendency to impose your cultural values on others. The reader is referred to [52] for a series of strategies that can foster inclusion, equity, and meaningful engagement in your collaborations.

4.8 Final Words

The answer to the question of "who are the people that make up the team?" is not trivial. It needs to be continually asked, especially as new members join the team. The more time you can invest in learning about the surface- and deep-level characteristics of team members the better the team can collectively build on its strengths, talents, and perspectives. These characteristics are fundamental input parameters into any team and diversity among team members is important for team effectiveness [6, 7, 9, 11]. Learning about these characteristics is best done in the context of the project and learning to navigate and negotiate the compositional diversity among the team members as part of the collaborative process. Johnson [53] puts it best when he states that, "Healthy teams work to understand their own styles and the styles of the others on the team, so they can communicate and work with others."

Collaboration, in its simplest form, is the process of working with another person or group of people to create, produce, or complete a task. The key word is process. Collaboration emerges and grows as relationships develop among team members [24, 54]. Relationships take time to develop. It is important to intentionally facilitate the emergence of relationships using a variety of communication processes and learn about team member characteristics—behavioral characteristics, approaches to research, motivational drivers, world views, values, talents, and interests. Taking time to do this will create a safe environment that encourages the development of trust and respect crucial for effective teams [35]. The importance of having an intentional process for participants to explore the characteristics of themselves and their teammates is important to the emergence of collaboration [6, 7, 9, 11, 24].

Neuroscience Connections

Our brain is a social organ that works best when it connects to others. Addressing the question, "Who are the people that make up the team?" is foundational to developing the connections and relationships necessary for effective collaboration. Questions are powerful learning tools in collaborative teams. There are many things to learn about others, as represented in the Iceberg Model of Culture, that can promote learning and the exchange of ideas among team members. To value the diversity of team member experiences and perspectives, the practice of self-evaluation, reflection, wait time, active listening, curiosity, among other things, will help individuals and teams come to understand themselves better in all dimensions, reduce assumptions that contribute to implicit bias, and develop a "sense of we" and a "team rhythm" in which team members feel psychologically safe and that they belong. When this type of environment and all team members feel their contributions are valued, the team will perform at a higher level and be more effective.

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