

Personality and Efficiency of Group Work

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The efficiency of high-school teenagers working in groups was studied and analyzed through a lens of Myers-Briggs Typology to determine traits that aid in higher efficiency in teamwork and higher quality leadership.

Background Information

Function Pairs

The middle two letters that are the basis for much of your brain's work.

Sensing plus Thinking (ST)

- Objective and analytical approach to life and work
- Focus on realities and practical applications
- Less interested in nurturing of others or attending to their own growth and development
- Business, management, banking, applied sciences, construction, production, police, military

Sensing plus Feeling (SF)

- Warm, people-oriented manner approach to life and work
- Focus on realities and hands-on careers
- Less interested in analytical and impersonal approach to information and ideas
- Clergy, teaching, health care, child care, sales and office work, personal services

Intuition plus Feeling (NF)

- Warm and enthusiastic approach to life and work
- Focus on ideas and possibilities, particularly "possibilities for people"
- Less interested in careers with impersonal or technical approach to things and factual data
- Arts, clergy, counseling, psychology, writing, education, research, health care

Intuition plus Thinking (NT)

- Logical and objective approach to life and work
- Focus on possibilities (with a technical application) and use their ingenuity
- Less interested in careers requiring a warm, sympathetic, and hands-on approach to helping people
- Sciences, law, computers, arts, engineering, management, technical work

Function Attitudes

- **Se (extroverted sensing):** acts on concrete data from here and now. Trusts the present, then lets it go
- **Si (introverted sensing):** compares present facts and experiences to past experience. Trusts the past. Stores sensory data for future use
- **Ne (extroverted intuition):** sees possibilities in the external world. Trust flashes from the unconscious, which can then be shared with others
- **Ni (introverted intuition):** looks at consistency of ideas and thoughts with an internal framework. Trusts flashes from the unconscious, which may be hard for others to understand
- **Te (extroverted thinking):** seeks logic and consistency in the outside world. Concern for external laws and rules
- **Ti (introverted thinking):** seeks internal consistency and logic of ideas. Trusts his or her internal framework, which may be difficult to explain to others
- **Fe (extroverted feeling):** seeks harmony with and between people in the outside world. Interpersonal and cultural values are important
- **Fi (introverted feeling):** seeks harmony of action and thoughts with personal values. May not always articulate those values

A brief overview of each personality type is attached at the end of report.

Methods

Subjects

Twenty-seven individuals were initially selected to be assessed as they participated in the Student Response Initiative as a leader or a member. Seven were unresponsive to communication and assumed to decline to take part in the study. Twenty individuals were included in the study (EDU-1: 10 participants; HEA-1: 7 participants; EDU-2: 3 participants). Subjects were observed between 9 May 2020 and 9 July 2020 during their online interactions for their service with the Student Response Initiative. All groups did not differ significantly with regard to the length of time they had worked together or the type of work that was being performed.

Procedure

Participants were surveyed to provide their self-reflection about one's preferred form of communication, work style, self-judged leadership potential, and initiative. Participants were asked to self-report their personality type as indicated by Myers Briggs Typology. They were not informed of the exact purpose of this experiment, but were informed that the results may be used in the formation of teams or the design of organizational structure in the future. The surveys were interpreted and scaled to numerical values into the following categories: communication, personal efficiency, contributions to group efficiency, leadership potential, leadership type, and active contributions.

In the initial stages of the observational period, the groups (EDU-1, HEA-1, EDU-2) were studied during their routine weekly meetings, online messaging conversations, and other instances where the entire group was present. Meeting attendance, frequency of member input, and quality of member input was noted, as well as other factors that may have contributed to the behavior of subjects during the meeting, such as the

unexpected presence of an authority figure. Additional observations were taken about the subjects' preferences and comfort levels when contributing in a group setting.

After completing the observational stage, interviews were conducted with each participant in a leadership potential, such as the project heads and unit leaders. In these interviews, the selected leaders were asked about the efficiency and engagement level of their members, as well as the level of trust between the leader and member that the work would be completed. Another aspect that was studied was the communication between the leader and their members: the frequency, effectiveness, and how it looked. These questions were asked to gain a clearer understanding of the group dynamics, as the researchers believed that the leader would have a more thorough understanding of their members than a month-long observation could provide. This time was also used for researchers to provide participants with clarification on some of the research purposes.

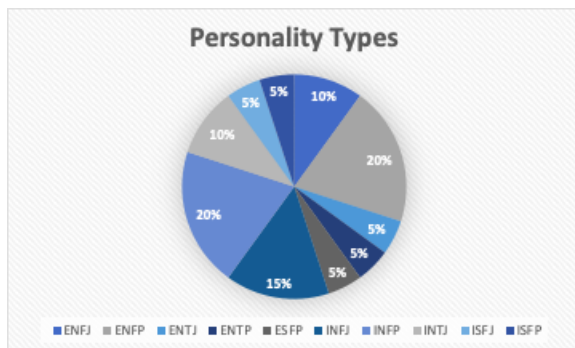
Data Collection

Data was collected continuously and recorded in three different ways. Initial survey information and responses were formatted and stored in a spreadsheet. Observational information collected throughout the initial period and the interview stage were recorded in a document in a bullet-point format. Interpretations and analyses, as well as modifications to the research format were stored in a separate document, also in bullet-point format. These documents will not be available to the public to ensure the privacy of the participants.

Data

Participant Personality Types

The breakdown of the personality types of the sample are as follows: 20% INFP, 20% ENFP, 15% INFJ, 10% INTJ, 10% ENFJ, and 5% of ENTJ, ENTP, ESFP, ISFJ, and ISFP each. Due to the sample size, it is difficult to accurately determine whether this ratio persists within the rest of the Student Response Initiative.



Communication

Due to the drastic disparity between personality types from which the data was collected, it was determined unreliable to form connections between the personality type and preferred method of communication. However, the data suggests that on average, individuals that communicated in concise messages were more efficient than others. An exception to this pattern was a group consisting solely of INFP individuals preferring communication through conversations who proved to be highly efficient, contradicting our hypothesis on the relationship between method of communication and efficiency.

Leadership

Leadership was measured with two standards: those with potential for leadership and the actual quality of leadership. The first comparison was made between individuals who preferred introversion and those who preferred extroversion. The scale for potential indicated that extroverted individuals were more likely to succeed

as leaders, with a score of 1.33 (out of 2) compared to the introverts' potential of 1 (out of 2).

However, when the quality of leadership was compared, there was minimal difference, with extroverts rated at 1.11 (out of 2) and introverts at 1.09 (out of 2).

	Potential	Quality
Introversion	1.00	1.09
Extroversion	1.33	1.11

Another comparison was made between the NT personality with the rest of the sample. The quality of NT leadership was scored at 1.5 (out of 2), whereas the rating for the rest of the sample was 1, indicating a strong correlation. For comparison, the quality of NF leadership was scored at 0.92 (out of 2). The sample of sensing personalities was determined too small for an accurate analysis of leadership quality.

Active Contributions

Extroverted personalities were noted to make slightly more active contributions than their introverted counterparts. The quality of contributions was not recorded quantitatively, so it cannot be commented on at this point.

Mindset

Thinking personalities indicated a slightly higher open mindedness to constructive criticism than their feeling counterparts, but the difference was minor (4.33%). More information gathered about different breakdowns of the 4-letter personality types are explained in the following page.

Results

Communication

In general, concise communication is correlated with higher efficiency. An outlier to this pattern, which was the third group, EDU-2. All members were of the INFP personality type with their preferred method of communication through conversations instead of messages filled only with technical information. However, this group was still found to be one of the most efficient and productive units.

Leadership

Sensing-judging personality types were observed to be less reliable as leaders regarding both potential and skill set in organizing a group towards a motive. Extroverts were found to have slightly more preferable qualities for leadership such as a strong and vocal personality, but that difference is negligible when comparing the actual quality of leadership between introverts and extroverts. There is a strong evidence that intuition-thinking personality types make strong leaders in their organization of people and tasks, though they may overlook team building as less important than completing tasks. This trait is theorized to be balanced out with an NF personality type, usually the extroverts as they are less timid than their introverted counterparts. The NT's have shown talent in facilitating conversations such that everyone's idea is heard, which would be beneficial to the more timid INFx personalities.

Active Contributions

NT's have been observed to make more constructive contributions when they have an idea they feel compelled to share. Feeling-judging personalities have also been active contributors, and the current theory is that they are idealists who want their values to be weaved into their project such that it is actionable.

Work Style

As expected, organized workers are more reliable in completing work in a timely manner. This is not to say that spontaneous workers are inefficient with their time and efforts, but they can be unreliable at times as they do not adhere to a schedule.

Relationships

An especially cohesive unit was the group of INFP's. They were found to be likeable and highly efficient. There is no satisfactory explanation for this phenomenon as of now. On another note, it has been found that NT's are more attached to their tasks than their group members, not minding if they are exchanged into another group to continue their work. Uninterested INTJ's have been found to disengage from their work and their group, abandoning their responsibilities and team members.

Groups with 3 or less members may be too few to properly divide large tasks and projects, whereas those with 7 or more members have shown indications of inefficient communication. The optimal size of teams is estimated to be between 4-6 members, with slight flexibility on either end.

Mindset

NT are open to constructive criticism about their work and are quick to respond, but may be stubborn when their personality is criticized. They will likely need to be convinced by cold logic rather than emotional appeals. The NT's can be divided further into those with introverted intuition and those with extroverted intuition, which are xNTJ and xNTP respectively. This may be an area of further research, as the current data is inconclusive. On the other hand, SJ's are found to be more sensitive to criticism, the feeling personalities even more so than their thinking counterparts. As traditionalists, they are also more stubborn and reluctant to change, even when the need to do so is obvious.

INTJ

(Ni-Te-Fi-Se)

Imaginative and strategic thinkers with a plan for everything.

- Original minds and great drive for implementing their ideas and achieving their goals
- Quickly see patterns in external events and develop long-range explanatory perspectives
- When committed, organize a job and carry it through
- Skeptical and independent, high standards of competence and performance
- Talent for seeing possibilities for improvement (at work, at home, or in themselves)

Strengths:

- Quick, imaginative, and strategic mind
- High self-confidence
- Independent and decisive
- Hard-working and determined (goal-oriented)
- Open-minded (as long as they're argued well)
- Jack-of-all-trades (can learn from almost any system, and use the ideas when needed)

Weaknesses:

- Arrogant (reject opposing opinions of those they believe to be intellectually inferior)
- Judgemental (brand emotional considerations and history as illogical, dismissed)
- Overly analytical (in relationships)
- Loathe highly structured environments (blindly following without knowing why)
- Clueless in romance

INTP

(Ti-Ne-Si-Fe)

Innovative inventors with an unquenchable thirst for knowledge.

- Seek to develop logical explanations for everything that interest them
- Theoretical and abstract, interested more in ideas than in social interaction
- Quiet, contained, flexible, adaptable
- Unusual ability to focus in depth to solve problems in their area of interest
- Skeptical, sometimes critical, always analytical
- Understand unifying themes of life in complexity

Strengths:

- Great analysts and abstract thinkers
- Imaginative and original
- Open-minded
- Enthusiastic (interested or shared interests)
- Objective
- Honest and straightforward

Weaknesses:

- Private and withdrawn
- Insensitive (subjectivity is irrational and tradition is a cage)
- Absent-minded (become forgetful if it's irrelevant)
- Condescending (struggle to gauge conversation from partner's perspective)
- Loathe rules and guidelines (reinvent the wheel constantly and shun security for autonomy)
- Second-guess themselves (never commit to a decision at all)

ENTJ

(Te-Ni-Se-Fi)

Bold, imaginative and strong-willed leaders, always finding a way or making one.

- Frank, decisive, assume leadership readily
- Quickly see illogical and inefficient procedures and policies
- Develop and implement comprehensive systems to solve organizational problems
- Enjoy long-term planning and goal setting
- Usually well informed, well read, and enjoy expanding their knowledge and passing it on to others
- Forceful in presenting their ideas
- Usually articulate and quick-witted

Strengths:

- Efficient
- Energetic
- Self-confident
- Strong-willed
- Strategic thinkers
- Charismatic and inspiring

Weaknesses:

- Stubborn and dominant (dig in their heel trying to win every debate and push their vision)
- Intolerant (unsupportive of ideas that distract from their primary goals, especially emotional considerations)
- Impatient (may misinterpret contemplation as stupidity or disinterest in their haste)
- Arrogant (respect quick thoughts and firm convictions and look down on others)
- Poor handling of emotions
- Cold and ruthless (insensitive in pursuing goals)

ENTP

(Ne-Ti-Fe-Si)

Smart and curious thinkers who cannot resist an intellectual challenge

- Quick, ingenious, stimulating, alert, and outspoken
- Resourceful in solving new and challenging problems
- Adept at generating conceptual possibilities and then analyzing them strategically
- Good at reading other people
- Bored by routine

Strengths:

- Knowledgeable
- Quick thinkers
- Original
- Excellent brainstormers
- Charismatic
- Energetic

Weaknesses:

- Very argumentative (tear down beliefs and methods through debate)
- Insensitive (misjudge feelings and push past tolerance levels)
- Intolerant
- Can find it difficult to focus (boredom comes too easily)
- Dislike practical matters

INFJ

(Ni-Fe-Ti-Se)

Quiet and mystical, yet very inspiring and tireless idealists.

- Seek meaning and connection in ideas, relationships, and material possessions
- Want to understand what motivates people and are insightful about others
- Conscientious and committed to their firm values
- Develop a clear vision about how to best serve the common good
- Organized and decisive in implementing their vision
- Creative nurturers with strong sense of personal integrity

Strengths:

- Creative (vivid imagination + strong compassion, 'perfect solution')
- Insightful (see through disingenuous motives)
- Inspiring and convincing (appeal to inner idealist in audience)
- Decisive (follow through plan with whatever necessary)
- Determined and passionate
- Altruistic

Weaknesses:

- Sensitive
- Extremely private
- Perfectionistic
- Always need to have a cause
- Can burn out easily

INFP

(Fi-Ne-Si-Te)

Poetic, kind and altruistic people, always eager to help a good cause.

- Idealistic, loyal to their values and to people who are important to them
- Want an external life that is congruent with their values
- Curious, quick to see possibilities, can be catalysts for implementing ideas
- Seek to understand people and to help them fulfill their potential
- Adaptable, flexible and accepting unless a value is threatened

Strengths:

- Idealistic
- Seek and value harmony
- Open-minded and flexible
- Very creative
- Passionate and energetic
- Dedicated and hard working

Weaknesses:

- Too idealistic
- Too altruistic
- Impractical
- Dislike dealing with data
- Take things personally
- Difficult to get to know

ENFJ

(Fe-Ni-Se-Ti)

Charismatic and inspiring leaders, able to mesmerize their listeners.

- Warm, empathetic, responsible, and responsible
- Highly attuned to emotions, needs, and motivations of others
- Find potential in everyone, want to help other fulfill their potential
- May act as catalysts for individual and group growth
- Loyal, responsible to praise and criticism
- Sociable, facilitate others in a group and provide inspiring leadership

Strengths:

- Tolerant (team players)
- Reliable
- Charismatic
- Altruistic
- Natural leaders

Weaknesses:

- Overly idealistic
- Too selfless
- Too sensitive (to criticism)
- Fluctuating self-esteem
- Struggle to make tough decisions

ENFP

(Ne-Fi-Te-Si)

Enthusiastic, creative and sociable free spirits, who can always find a reason to smile.

- Warmly enthusiastic and imaginative
- See life as full of possibilities
- Make connections between events and information very quickly, and confidently proceed based on the patterns they see
- Want a lot of affirmation from others, readily giving appreciation and support
- Spontaneous and flexible, often rely on their ability to improvise and their verbal fluency

Strengths:

- Curious
- Observant
- Energetic and enthusiastic
- Excellent communicators
- Know how to relax
- Very popular and friendly

Weaknesses:

- Poor practical skills
- Find it difficult to focus (like to explore interpersonal connections and philosophy)
- Overthink things
- Get stressed easily
- Highly emotional
- Independent to a fault

ISTJ

(Si-Te-Fi-Ne)

Practical and fact-minded individuals, whose reliability cannot be doubted.

- Quiet, serious, earn success by thoroughness and dependability
- Practical, matter-of-fact, realistic and responsible
- Decide logically what should be done and work toward it steadily, regardless of distractions
- Take pleasure in making everything orderly and organized--their work, home, life
- Value traditions and loyalty

Strengths:

- Honest and direct
- Strong-willed and dutiful
- Very responsible
- Calm and practical
- Create and enforce order
- Jacks-of-all-trades

Weaknesses:

- Stubborn
- Insensitive
- Always by the book
- Judgemental
- Often unreasonably blame themselves

ISFJ

(Si-Fe-Ti-Ne)

Very dedicated and warm protectors, always ready to defend their loved ones.

- Quiet, friendly, responsible, and conscientious
- Committed and steady in meeting their obligations
- Thorough, painstaking, and accurate
- Loyal, considerate, notice and remember specifics about people who are important to them, concerned with how others feel
- Strive to create an orderly and harmonious environment at work and at home

Strengths:

- Supportive
- Reliable and patient
- Imaginative and observant
- Enthusiastic
- Loyal and hard-working
- Good practical skills

Weaknesses:

- Humble and shy (refuse to make their thoughts known)
- Take things too personally
- Repress their feelings
- Overload themselves
- Reluctant to change
- Too altruistic

ESTJ

(Te-Si-Ne-Fi)

Excellent administrators, unsurpassed at managing things or people.

- Practical, realistic, matter-of-fact
- Decisive, quickly move on to implement decisions
- Organize project and people to get things done, focus on getting results in the most efficient way possible
- Take care of routine details
- Have a clear set of logical standards, systematically follow them and want others to also
- Forceful in implementing their plans

Strengths:

- Dedicated
- Strong-willed
- Direct and honest
- Loyal, patient and reliable
- Enjoy creating order
- Excellent organizers

Weaknesses:

- Inflexible and stubborn
- Uncomfortable with unconventional situations
- Judgemental
- Too focused on social status
- Difficult to relax
- Difficulty expressing emotion

ESFJ

(Fe-Si-Ne-Ti)

Extraordinarily caring, social and popular people, always eager to help.

- Warm hearted, conscientious, and cooperative
- Want harmony in their environment, work with determination to establish it
- Like to work with others to complete tasks accurately and on time
- Loyal, follow through even in small matters
- Notice what others need in their day-by-day lives and try to provide it
- Want to be appreciated for who they are and what they contribute

Strengths:

- Strong practical skills
- Strong sense of duty
- Very loyal
- Sensitive and warm
- Good at connecting with others

Weaknesses:

- Worried about their social status
- Inflexible
- Reluctant to innovate or improvise
- Vulnerable to criticism
- Often too needy (compliments)
- Too selfless

ISTP

(Te-Se-Ni-Fe)

Bold and practical experimenters, masters of all kinds of tools.

- Tolerant and flexible, quiet observers until a problem appears, then act quickly to find solution
- Analyze what makes things work and readily get through large amounts of data to isolate the core of practical problems
- Interested in cause and effect, organize facts using logical principles, value efficiency

Strengths:

- Optimistic and energetic
- Creative and practical
- Spontaneous and rational
- Know how to prioritize
- Great in a crisis
- Relaxed

Weaknesses:

- Stubborn
- Insensitive
- Private and reserved
- Easily bored
- Dislike commitment
- Risky behavior

ISFP

(Fi-Se-Ni-Te)

Flexible and charming artists, always ready to explore and experience something new.

- Quiet, riendly, sensitive, and kind
- Enjoy the present moment, what's going on around them
- Like to have their own space and work within their own time frame
- Loyal and committed to their values and to people who are important to them
- Dislike disagreements and conflicts, do not force their opinions or values on others

Strengths:

- Charming
- Sensitive to others
- Imaginative
- Passionate
- Curious
- Artistic

Weaknesses:

- Fiercely independent
- Unpredictable
- Easily stressed
- Overly competitive
- Fluctuating self-esteem

ESTP

(Se-Ti-Fe-Ni)

Smart, energetic and very perceptive people, who truly enjoy living on the edge.

- Flexible and tolerant, take pragmatic approach focused on immediate results
- Theories and conceptual explanations bore them--want to energetically solve the problem
- Focus on the here-and-now; spontaneous, enjoy each moment they can be active with others
- Enjoy material comforts and style
- Learn best through doing

Strengths:

- Bold
- Rational and practical
- Original
- Perceptive
- Direct
- Sociable

Weaknesses:

- Insensitive
- Impatient
- Risk-prone
- Unstructured
- May miss the bigger picture
- Defiant

ESFP

(Se-Fi-Te-Ni)

Spontaneous, energetic and enthusiastic people--life is never boring around them.

- Outgoing, friendly, and accepting
- Exuberant lovers of life, people, and material comforts
- Enjoy working with others to make things happen
- Bring common sense and a realistic approach to their work, and make work fun
- Flexible and spontaneous, adapt readily to new people and environments
- Learn best by trying a new skill with other people

Strengths:

- Bold
- Original
- Aesthetics and showmanship
- Practical
- Observant
- Excellent people skills

Weaknesses:

- Sensitive (strongly emotional)
- Conflict-averse
- Easily bored
- Poor long-term planners
- Unfocused