Ethan Gotian **Teamology Abstract**

INTRODUCTION

To optimize team performance, you need to leverage the strength of every member and minimize duplication of effort. Using a survey to identify and categorize students based on cognitive modes leads to the construction and organization of effective teams.

BACKGROUND

Myers-Briggs Type Indicator® (MBTI®) personality inventory is based on psychological types introduced in the 1920s by Carl G. Jung. The MBTI tool was developed in the 1940s by Isabel Briggs Myers and Katharine Briggs for the identification of basic preferences of each of the four dichotomies, which were split into 16 distinctive personality types.

Based on the MBTI, Doug Wilde (Stanford University) uses a 20-item survey to categorize students into the aforementioned 16 distinctive personalities. Doug Wilde's validated 'teamology' theory seeks to understand how team members with varying cognitive preferences share information and make decisions and achieve a deeper understanding of how to form individuals into successful collaborative teams.

METHODS

Using Doug Wilde's 20-item survey, four modes involve information collection, and four involve decision-making. The digital interface we developed is used to categorize students into 16 distinctive personalities. We created a program that calculates students' personality types from their responses to the inventory questions, which takes into account students' learning styles, understanding, and characterization of decision-making to develop high-performing teams. This optimizes group dynamics, collaboration, organization, and success by building optimal teams to effectively tackle and solve problems.

Using multiple programming languages, including Python, HTML, CSS, JavaScript, and SQL, we created a user interface with a 20-question inventory. Responses are then added to a database. Based on the results, a four-letter combination is composed, representing the student's cognitive mode. Each combination corresponds to a suggested role on the team.

We then cross-referenced multiple personality indicators and developed a reporting structure that outlined the strength of each person. Reports which can be sorted in different ways allow teachers to look at all the results in one place. The students also get a detailed report to enhance their own knowledge.

CONCLUSION

The program generated detailed individualized custom reports for the student, educators, and administrators. The report data includes psychological function and the natural role and, therefore, could be leveraged to optimize team dynamics, productivity, and efficiency. It allows for role assignments and optimal team formation. Teams work best when all members know, share, and adopt roles consistent with their preferences. The strongest teams will have members in each affinity group.

By utilizing the full range of information available from these reports, we will enhance our understanding of educational processes beyond what is possible from existing random team-based methods alone. Team members can learn from and challenge each other, thereby increasing the overall value of the group. This would enhance opportunities for outreach and community participation across multiple educational programs.