



The Voice Premium Index: Measuring the Returns to Debate and Public Speaking Among Students

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Abstract

Communication skills are an important component of human capital and can influence students' academic, social, and future professional development. This study introduces the Voice Premium Index (VPI), a composite measure developed to assess the broader benefits associated with debate and public speaking participation. The index captures six dimensions: communication clarity, persuasion ability, leadership in discussions, confidence in public speaking, critical thinking, and opportunity access. Using primary survey data from students in India and the United States, the study examines the association between debate participation and communication-related outcomes. The analysis employs reliability testing, descriptive statistics, correlation analysis, independent-samples t-tests, and multiple regression. The results indicate that the VPI has strong internal consistency and that students with debate experience report higher VPI scores than students without such experience. Debate engagement is positively associated with VPI, while academic performance also shows a significant relationship with the index. Communication confidence and leadership are closely associated with overall VPI scores, suggesting that the benefits of communication-focused activities extend beyond speaking ability alone. Demographic characteristics do not show significant differences in VPI within the sample. The study contributes to the literature by framing communication-related competencies as a measurable component of human capital and by proposing the VPI as a composite approach to assessing the outcomes of debate and public speaking. The findings support greater consideration of structured communication activities within student development and educational programs.

Keywords: *Communication Skills; Debate Participation; Human Capital; Public Speaking; Voice Premium Index*

1. Introduction

Communication skills are widely recognized as one of the most valuable forms of human capital in modern society. The ability to articulate ideas clearly, persuade audiences, negotiate differences, and communicate effectively influences success in education, employment, leadership, and everyday social interaction. Human capital theory proposes that investments in knowledge, skills, and competencies enhance an individual's productivity and generate long-term economic and social returns (Becker, 1993). Within this framework, communication skills are not merely interpersonal attributes but productive assets that contribute to academic achievement, employability, career progression, and leadership development. Students with well-developed communication abilities are generally better equipped to participate actively in classroom discussions, collaborate in group settings, present ideas confidently, and perform effectively in interviews and professional environments. Likewise, strong communication skills facilitate relationship building, civic engagement, and professional networking, thereby supporting both individual advancement and broader societal development. The growing importance of communication skills is reflected in employer expectations worldwide. The National Association of Colleges and Employers (NACE) identifies communication, critical thinking, teamwork, professionalism, leadership, and career self-development as core competencies required for career readiness. During the development and validation of these competencies, most surveyed employers identified oral and written communication as essential or absolutely essential for workplace success, highlighting communication as one of

the most valued graduate attributes (National Association of Colleges and Employers [NACE], 2025). These findings demonstrate that technical expertise alone is increasingly insufficient for career success; employers also seek graduates who can communicate ideas effectively, collaborate across diverse teams, and solve complex problems.

Rapid technological advancement, globalization, and the expansion of digital communication have further increased the value of communication-related competencies. The World Economic Forum's Future of Jobs Report 2025 identifies analytical thinking, resilience, leadership, and social influence among the most important skills expected to grow in demand over the coming years as organizations adapt to artificial intelligence, automation, and evolving workplace requirements. The report also estimates that approximately 59% of the global workforce will require reskilling or upskilling by 2030, emphasizing that human-centered competencies such as communication, critical thinking, and leadership will remain essential despite rapid technological change. Consequently, educational institutions are increasingly expected to prepare students not only with disciplinary knowledge but also with transferable competencies that enable them to thrive in dynamic professional and social environments.

Recognizing these changing demands, schools and educational organizations have increasingly incorporated communication-focused learning experiences beyond traditional classroom instruction. Extracurricular activities such as debate, public speaking competitions, Model United Nations (MUN), mock trials, youth parliaments, and student leadership programs provide structured environments in which students practice research, argumentation, critical analysis, teamwork, and public speaking. Unlike conventional instructional approaches that often emphasize content acquisition, these activities require students to apply knowledge in authentic situations by defending viewpoints, responding to opposing arguments, and communicating under time constraints. Such experiences promote both cognitive development and interpersonal competence while preparing students for increasingly collaborative and communication-intensive academic and professional settings. Structured communication-based activities, including debate, Model United Nations (MUN), speech competitions, mock trials, and youth leadership forums, have emerged as important platforms for developing communication and higher-order thinking skills among students. These activities require participants to research complex issues, evaluate evidence, construct logical arguments, rebut opposing viewpoints, and communicate ideas effectively under time constraints. Unlike traditional classroom instruction, which often emphasizes knowledge acquisition, debate and public speaking promote active learning by requiring students to apply knowledge in authentic and competitive settings. Such experiential learning environments strengthen not only subject knowledge but also communication, collaboration, leadership, and decision-making abilities that are increasingly valued in higher education and the workplace (Kolb, 1984).

Among these activities, debate has received considerable attention as a pedagogical tool for developing critical thinking and communication competencies. Research consistently demonstrates that debate encourages students to analyze multiple perspectives, evaluate evidence critically, and formulate reasoned arguments before reaching conclusions. In a systematic review of debate in higher education, Amin et al. (2024) concluded that structured debate enhances critical thinking, communication skills, confidence, and collaborative learning by encouraging students to engage actively with diverse viewpoints rather than passively receiving information. Similarly, Sanders et al. (1994) found that students receiving instruction in argumentation demonstrated stronger reasoning abilities and greater competence in identifying weak or unsupported arguments than those receiving conventional instruction. These findings suggest that debate serves not only as a communication exercise but also as an effective approach for strengthening analytical reasoning and evidence-based decision-making. Beyond critical thinking, debate participation has been shown to improve students' confidence, leadership, and engagement. Communication-intensive activities provide repeated opportunities for students to express ideas publicly, receive constructive feedback, and gradually overcome communication apprehension. Lu and Mohamed (2025) reported that collaborative argumentation significantly enhanced students' learning engagement while simultaneously improving critical thinking dispositions and communication confidence. Likewise, van Gelder (2015) demonstrated that structured argument mapping substantially improves reasoning quality by helping learners organize evidence logically and evaluate competing claims more effectively. These findings indicate that debate and public speaking contribute to both cognitive and interpersonal development, equipping students with transferable skills applicable across academic, professional, and social contexts.

Participation in debate and public speaking activities has also expanded considerably over recent decades. The National Speech & Debate Association (NSDA), one of the world's largest educational organizations dedicated to speech and debate, has served more than 1.5 million students through thousands of member schools since its establishment, reflecting the widespread institutional adoption of competitive speaking programs (National Speech

& Debate Association, 2025). Similarly, Model United Nations has evolved into a global educational movement involving thousands of conferences each year across North America, Europe, Asia, Africa, and Latin America, providing students with opportunities to develop diplomacy, negotiation, public speaking, and international awareness. In India, debate competitions, youth parliaments, and Model United Nations conferences have experienced substantial growth over the past decade, particularly among private schools and urban educational institutions, demonstrating increasing recognition of communication-based extracurricular activities as valuable components of holistic student development. Despite the growing popularity of debate and public speaking programs, the evidence supporting their effectiveness remains fragmented. Many studies report improvements in confidence, communication ability, or critical thinking; however, these outcomes are often examined independently and measured using self-reported perceptions or qualitative observations. Although such findings provide valuable insights, they offer limited understanding of the broader educational and developmental returns associated with sustained participation in communication-focused activities. Consequently, educators and policymakers continue to face challenges in determining the extent to which investments in debate and public speaking translate into measurable improvements in students' communication competence, leadership capacity, and future opportunities.

Although previous research has consistently demonstrated that debate and public speaking contribute to improvements in communication, confidence, leadership, and critical thinking, the majority of existing studies evaluate these outcomes independently rather than as interconnected dimensions of student development. Much of the literature relies on qualitative methods, participant reflections, or self-reported perceptions of confidence, making it difficult to compare the overall benefits of communication-based activities across different groups of students. While these studies provide valuable insights into the educational value of debate, they offer limited evidence regarding the magnitude of the returns generated through sustained participation in communication-focused programs (Amin et al., 2024; Lu & Mohamed, 2025; Sanders et al., 1994). Consequently, there remains a lack of standardized quantitative approaches capable of measuring communication skills as a form of human capital that generates educational, professional, and personal advantages. This limitation is particularly significant because educational institutions, policymakers, parents, and students increasingly invest considerable time and resources in debate and public speaking activities without clear evidence regarding their measurable outcomes. Schools devote coaching resources, competition funding, and instructional time to communication-based extracurricular programs, while students often balance these activities alongside demanding academic schedules. However, existing evaluation methods rarely provide a comprehensive measure that captures how debate participation translates into broader developmental outcomes such as leadership opportunities, academic recognition, communication competence, and access to future educational or professional opportunities. Without such a framework, comparisons between students with different levels of debate experience remain difficult, limiting the ability of educators and policymakers to evaluate the effectiveness of these programs or justify further investment.

To address this gap, the present study introduces the Voice Premium Index (VPI), a novel quantitative framework designed to measure the broader returns associated with participation in debate and public speaking among students. The concept of a "premium" is derived from human capital theory, where investments in knowledge and skills generate additional value through improved productivity, performance, and long-term opportunities (Becker, 1993). In the context of this research, the Voice Premium Index represents the additional advantages associated with communication-based activities by integrating multiple dimensions of student development into a single composite measure. Rather than examining communication skills in isolation, the index evaluates six complementary dimensions: communication clarity, persuasion ability, leadership in discussions, confidence in public speaking, critical thinking, and opportunity access. Together, these dimensions provide a more comprehensive assessment of the value generated through participation in structured communication activities.

The study focuses on students during adolescence, generally between the ages of 13 and 18 years, a developmental period during which communication, leadership, and critical thinking skills undergo substantial growth. Human capital theory suggests that investments made during early stages of education produce cumulative benefits throughout an individual's academic and professional life (Becker, 1993). Participation in debate and public speaking during secondary education may therefore influence not only immediate academic performance but also future university readiness, scholarship opportunities, employability, leadership development, and civic engagement. Investigating communication skill development during this stage provides valuable insight into how early educational interventions can contribute to long-term personal and professional success. Accordingly, this study examines whether participation in debate and public speaking is associated with higher Voice Premium Index scores compared with students who have limited or no experience in communication-based activities. It further

investigates the extent to which factors such as years of debate experience, frequency of competition participation, and mentoring experience influence communication-related outcomes. By introducing a standardized quantitative measure, this research seeks to transform communication skills from an abstract educational outcome into a measurable indicator of human capital development. The findings are expected to contribute to educational research by providing empirical evidence that can inform curriculum design, extracurricular programming, and policy initiatives aimed at strengthening communication, leadership, and critical thinking among students. Ultimately, the study advances the understanding of how investments in communication skills can generate measurable educational and developmental returns, reinforcing the growing recognition that effective communication is among the most valuable competencies required for success in the twenty-first century.

2. Literature Review

2.1 Debate as a Tool for Skill Development

Debate has increasingly been recognized as an effective pedagogical strategy that develops students beyond traditional classroom learning. Unlike passive learning approaches, debate actively engages students in analyzing information, constructing evidence-based arguments, responding to opposing viewpoints, and communicating ideas effectively. Through these activities, students develop essential twenty-first century competencies including communication, leadership, critical thinking, persuasion, and problem-solving. Recent educational research emphasizes that debate not only improves academic performance but also prepares students for professional environments that require analytical reasoning and effective decision-making.

2.2 Debate and Critical Thinking

Critical thinking is consistently identified as one of the most significant outcomes of debate participation. According to Amin et al. (2024), debating requires participants to research evidence, evaluate competing viewpoints, construct logical arguments, and respond to counterarguments within limited preparation time. These processes encourage analytical reasoning and intellectual flexibility, allowing students to evaluate issues from multiple perspectives rather than relying on personal opinions. The study further argues that debate promotes holistic thinking by integrating knowledge from different disciplines and preparing students for complex real-world challenges.

Similarly, Sanders, Wiseman, and Gass (1994) examined whether formal argumentation instruction enhances critical thinking abilities. Their longitudinal study involving 357 university students found that students who received argumentation training became significantly better at distinguishing strong and weak arguments, perceived themselves as more effective communicators, and demonstrated lower levels of verbal aggressiveness. The findings suggest that systematic argumentation instruction contributes directly to improved critical thinking and more constructive communication behavior.

Van Gelder (2015) further strengthened this perspective by demonstrating the effectiveness of argument mapping in developing critical thinking. Through a meta-analysis of multiple educational studies, the author concluded that students exposed to structured argument mapping achieved significantly higher improvements in reasoning and analytical abilities than students using traditional instructional methods. The study argues that visually organizing arguments helps learners better understand complex reasoning processes and improves long-term critical thinking skills.

2.3 Argumentation and Communication Skills

Communication is another fundamental competency strengthened through debate and structured argumentation. McAlister, Ravenscroft, and Scanlon (2004) investigated structured online academic discussions and found that guided argumentation significantly improved the quality of students' discussions. Students participating in structured dialogues produced more evidence-based arguments, engaged more deeply with opposing viewpoints, and demonstrated longer and more sophisticated argumentative exchanges than students using unstructured discussion methods. These findings indicate that structured argumentation promotes higher-quality communication and reasoning skills.

Rapanta and Macagno (2019) extended this argument by examining argumentative reasoning in academic writing among doctoral students. Their intervention demonstrated that explicit instruction in argumentation theory significantly increased students' use of valid argumentative strategies while reducing unsupported reasoning. The study concludes that teaching students to organize evidence, justify claims, and address counterarguments substantially improves academic communication and critical reasoning.

2.4 Collaborative Argumentation and Student Engagement

Recent studies have shifted attention from individual debate performance to collaborative argumentation. Lu and Mohamed (2025) investigated collaborative argumentation among university students using an eight-week intervention. Their findings revealed significant improvements in students' learning engagement and critical thinking dispositions following collaborative argumentation activities. The researchers also found that increased participation during argumentation positively influenced learning engagement, suggesting that active involvement in structured discussions plays an important role in developing critical thinking.

These findings suggest that debate and collaborative argumentation not only improve cognitive abilities but also encourage greater participation, motivation, and confidence in learning environments.

2.5 Artificial Intelligence and Future Communication Skills

The rapid growth of artificial intelligence has increased the importance of uniquely human communication skills. Bharadiya (2023) notes that AI applications are expanding rapidly across industries, automating many technical and analytical tasks while increasing demand for human abilities such as communication, leadership, creativity, and critical thinking. As organizations increasingly adopt AI-driven technologies, interpersonal communication and persuasive reasoning become valuable competitive advantages that machines cannot easily replicate.

2.6 Debate, Communication Skills, and Career Success

Communication and critical thinking are increasingly important skills in academic and professional environments. The ability to evaluate information, communicate ideas clearly, collaborate with others, and make informed decisions is particularly relevant in environments characterized by technological change and increasingly complex forms of work. These competencies closely align with the communication and analytical skills developed through debate participation.

2.7 Research Gap

Although previous studies consistently demonstrate that debate improves critical thinking, communication, argumentative reasoning, and learning engagement, several important gaps remain. Most existing research focuses on university students and evaluates debate using isolated outcomes such as critical thinking or communication ability. Very few studies attempt to combine multiple competencies—including communication, persuasion, leadership, confidence, critical thinking, and opportunity creation—into a single measurable framework.

Furthermore, limited research has examined these combined outcomes among school students using self-reported experiences across different levels of debate participation. To address this limitation, the present study introduces the Voice Premium Index (VPI), a composite measure that integrates six dimensions of personal and communication development. By examining the relationship between debate participation and VPI, this study aims to provide a broader understanding of how debate contributes to students' overall personal and professional readiness.

3. Methodology

This section presents the methodological framework adopted for the study. It outlines the research objectives, research design, sampling strategy, data collection period, survey instrument, ethical considerations, and analytical framework used to examine the relationship between debate participation and communication-related outcomes among students.

3.1 Objectives of the Study

- To examine whether participation in debate and public speaking activities is associated with higher communication, leadership, and critical thinking skills among students.
- To assess the impact of debate experience, competition participation, and mentoring experience on the Voice Premium Index (VPI).

3.2 Research Design

This study adopts a quantitative, cross-sectional survey design to examine the relationship between debate participation and the development of communication, leadership, and critical thinking skills. Primary data were collected through a structured online questionnaire administered to students with varying levels of debate and public speaking experience.

The cross-sectional design enables comparisons among students with different levels of participation in debate and public speaking at a single point in time while identifying factors associated with communication-related

outcomes. The study is grounded in Human Capital Theory (Becker, 1964), which suggests that investments in communication, leadership, and critical thinking skills generate measurable educational and personal benefits.

3.3 Sampling and Sample Participants

A non-probability purposive sampling technique was employed to recruit participants with varying levels of exposure to debate and public speaking activities. Participants were recruited through school debate clubs, NGO debate programs, school networks, and personal contacts.

The final sample consisted of 34 respondents, primarily high school students aged 13–18 years, with a small number of university and graduate students aged 19 years and above who possessed relevant debate or public speaking experience. The inclusion of these participants provided additional perspectives on the relationship between communication skills and debate participation.

Respondents were categorized into three groups:

- Students actively participating in competitive debate.
- Students involved in other public speaking activities, including Model United Nations (MUN), speeches, presentations, and elocution.
- Students with no formal debate or public speaking experience.

The sample represented students from India and the United States, studying in public, private, and international schools with diverse academic and socioeconomic backgrounds.

3.4 Data Collection Period

Data were collected over a period of approximately two months using a structured online questionnaire developed through Google Forms. The survey link was distributed through debate clubs, school networks, NGO debate communities, and personal contacts. Participation was voluntary, and reminders were periodically shared to improve the response rate.

3.5 Survey Instrument

The primary data collection instrument was a self-administered structured questionnaire developed based on existing literature on debate education, communication competence, critical thinking, and human capital development.

The questionnaire consisted of three sections.

The first section collected demographic information, including age, gender, grade or educational level, country of residence, school type, socioeconomic background, and academic performance.

The second section captured respondents' debate and public speaking experiences, including years of debate participation, frequency of competitions, involvement in other public speaking activities, and mentoring or teaching experience.

The third section measured the Voice Premium Index (VPI) using six dimensions:

- Communication Clarity
- Persuasion Ability
- Leadership in Discussions
- Confidence in Public Speaking
- Critical Thinking
- Opportunity Access

Each dimension was measured using a five-point Likert scale, ranging from 1 (Strongly Disagree/Very Low) to 5 (Strongly Agree/Very High).

The overall Voice Premium Index (VPI) was calculated as the average score of the six dimensions.

Higher VPI scores indicate greater communication competence, leadership potential, and perceived educational opportunities.

3.6 Ethical Considerations

The study adhered to established ethical research practices. Participation was entirely voluntary, and respondents were informed about the purpose of the study before completing the questionnaire. No personally identifiable information was collected, and all responses remained anonymous and confidential. Participants had the right to withdraw from the survey at any stage without consequence. Since the majority of respondents were

school students, the questionnaire collected only non-sensitive information, and the data were used solely for academic research purposes.

3.7 Analytical Framework

The study adopts a quantitative analytical framework to examine the relationship between debate engagement and communication-related outcomes. The Voice Premium Index (VPI) serves as the primary outcome measure, complemented by the Communication Confidence Scale and Critical Leadership Scale to capture different dimensions of communication ability, confidence, and leadership development. The Debate Engagement Score is used as the key explanatory variable, representing students' involvement in debate and public speaking activities.

Descriptive statistics, reliability analysis (Cronbach's alpha), independent-samples t-tests, one-way ANOVA, Pearson correlation analysis, and multiple linear regression were employed to examine differences, relationships, and predictors of communication outcomes. Demographic characteristics were considered as contextual variables. Statistical significance was assessed at the 5% level ($p < 0.05$).

4. Results and Findings

4.1 Participant Characteristics

The study included 35 respondents from diverse academic and geographic backgrounds. The majority of participants were between 16–18 years of age ($n = 29$, 82.9%), followed by respondents aged 13–15 years and 19 years or above. The sample consisted of 22 male participants (62.9%) and 13 female participants (37.1%). Participants represented both India ($n = 19$, 54.3%) and the United States ($n = 16$, 45.7%), and included students from private, public/government, and international school settings.

More than half of the respondents had previous debate participation experience ($n = 19$, 54.3%), while 16 respondents (45.7%) had not participated in debate activities. The sample also demonstrated variation in academic performance and socioeconomic background, enabling examination of how debate engagement and individual characteristics relate to perceived communication advantages.

4.2 Reliability Analysis and Construction of Voice Premium Index

To measure students' perceived communication advantage, a Voice Premium Index (VPI) was developed using six items assessing the ability to explain complex ideas, persuade others, take leadership roles, speak confidently in public, evaluate arguments critically, and gain opportunities through communication skills.

The reliability analysis indicated strong internal consistency of the scale. The Voice Premium Index demonstrated a Cronbach's alpha value of 0.88, exceeding the recommended threshold of 0.70. Item-total correlations ranged from 0.60 to 0.81, confirming that all items contributed meaningfully to the overall construct.

Table 1. Reliability Statistics of Voice Premium Index

Construct	Number of Items	Cronbach's Alpha
Voice Premium Index	6	0.88

4.3 Descriptive Statistics of Key Constructs

Descriptive analysis indicated that respondents reported moderately high levels of communication-related capabilities. The overall mean score for the Voice Premium Index was 3.73 ($SD = 0.79$) on a five-point scale, suggesting that participants generally perceived themselves as possessing strong communication and leadership abilities.

The Communication Confidence Scale recorded a mean score of 3.80, while the Critical Leadership Scale recorded a mean score of 3.76. Debate Engagement Score had a mean value of 0.87 ($SD = 0.75$), reflecting variation in students' involvement in debate activities.

Table 2. Descriptive Statistics of Study Constructs

Construct	Mean	Standard Deviation
Voice Premium Index	3.73	0.79
Communication Confidence Scale	3.80	0.79
Critical Leadership Scale	3.76	0.86
Debate Engagement Score	0.87	0.75

4.4 Correlation Analysis

Pearson correlation analysis was conducted to examine the relationships among academic performance, debate engagement, communication confidence, critical leadership, and Voice Premium Index.

The results showed a strong positive relationship between the Voice Premium Index and both communication confidence ($r = 0.93$, $p < .001$) and critical leadership ($r = 0.94$, $p < .001$). This indicates that students who reported higher confidence in communication and stronger leadership abilities also demonstrated higher perceived voice premium.

Debate Engagement Score showed a significant positive correlation with Voice Premium Index ($r = 0.63$, $p < .001$), suggesting that greater involvement in debate activities was associated with stronger perceived communication advantages. Academic performance also showed a significant positive relationship with Voice Premium Index ($r = 0.60$, $p < .001$).

Table 3. Correlation Matrix

Variable	Academic Performance	Debate Engagement	Communication Confidence	Critical Leadership	Voice Premium Index
Academic Performance	1.00	0.27	0.54**	0.61**	0.60**
Debate Engagement	0.27	1.00	0.53**	0.63**	0.63**
Communication Confidence	0.54**	0.53**	1.00	0.81**	0.93**
Critical Leadership	0.61**	0.63**	0.81**	1.00	0.94**
Voice Premium Index	0.60**	0.63**	0.93**	0.94**	1.00

* $p < .05$, ** $p < .01$

4.5 Regression Analysis: Predictors of Voice Premium Index

A multiple linear regression analysis was conducted to identify factors predicting Voice Premium Index. Academic performance and debate engagement were entered as independent variables.

The regression model was statistically significant:

$$F(2,32) = 23.70, p < .001$$

The model explained 60% of the variance in Voice Premium Index ($R^2 = 0.60$; Adjusted $R^2 = 0.57$), indicating substantial explanatory power.

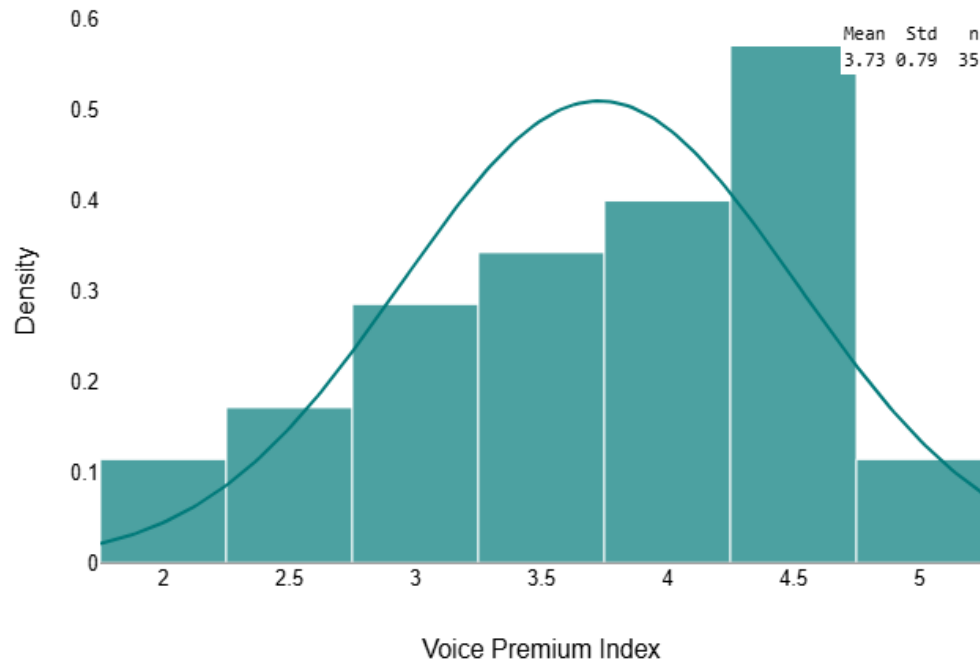
Both predictors significantly contributed to predicting Voice Premium Index. Academic performance had a positive and significant effect ($B = 0.43$, $\beta = 0.47$, $p < .001$), indicating that higher academic performance was associated with higher voice premium scores. Debate engagement also showed a significant positive relationship ($B = 0.53$, $\beta = 0.50$, $p < .001$), suggesting that students with greater involvement in debate activities demonstrated stronger perceived communication advantages.

Table 4. Regression Results Predicting Voice Premium Index

Predictor	B	Standardized β	p-value
Constant	1.99	—	<.001
Academic Performance	0.43	0.47	<.001
Debate Engagement Score	0.53	0.50	<.001

The estimated regression equation was:

$$\text{Voice Premium Index} = 1.99 + 0.43(\text{Academic Performance}) + 0.53(\text{Debate Engagement Score})$$

**Figure 1.** Distribution of Voice Premium Index Scores

The distribution indicates that Voice Premium Index scores were concentrated toward the higher end of the five-point scale. Most respondents recorded VPI scores between approximately 3.0 and 4.5, with fewer observations at the lower end of the scale. This suggests that participants generally reported moderate to high levels of communication-related capabilities, consistent with the overall mean VPI score of 3.73.

4.6 Effect of Debate Participation on Voice Premium Index

An independent samples t-test was conducted to examine whether students with previous debate participation differed in Voice Premium Index compared with students without debate experience.

Students who had participated in debate reported significantly higher Voice Premium Index scores ($M = 4.15$, $SD = 0.52$) compared with students who had not participated ($M = 3.23$, $SD = 0.78$).

The difference was statistically significant:

$$t(33) = -4.16, p < .001$$

with a large effect size (Cohen's $d = 1.41$), indicating that debate participation represents a meaningful differentiating factor associated with perceived communication advantage.

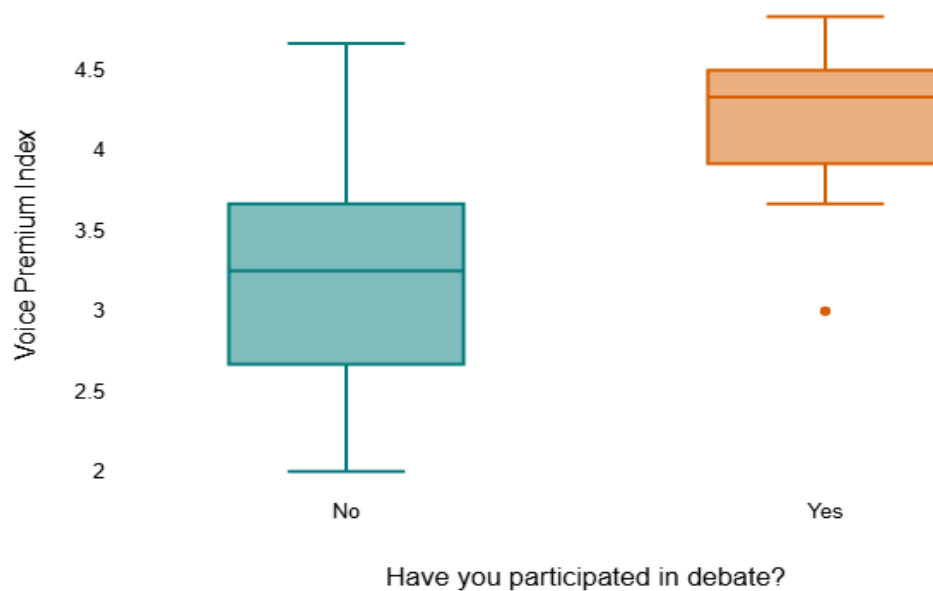


Figure 2. Voice Premium Index by Debate Participation Group

The boxplot shows a clear difference in Voice Premium Index scores between students with and without debate participation. Students who had participated in debate generally recorded higher VPI scores, with their distribution concentrated around the higher end of the scale. In comparison, students without debate experience showed lower and more dispersed VPI scores. This visual pattern is consistent with the independent-samples t-test, which found a statistically significant difference between the two groups.

4.7 Relationship Between Debate Engagement and Voice Premium Index

A regression visualization was created to examine the relationship between debate engagement and Voice Premium Index. The fitted regression line demonstrated a positive relationship, indicating that increasing levels of debate engagement were associated with higher Voice Premium Index scores.

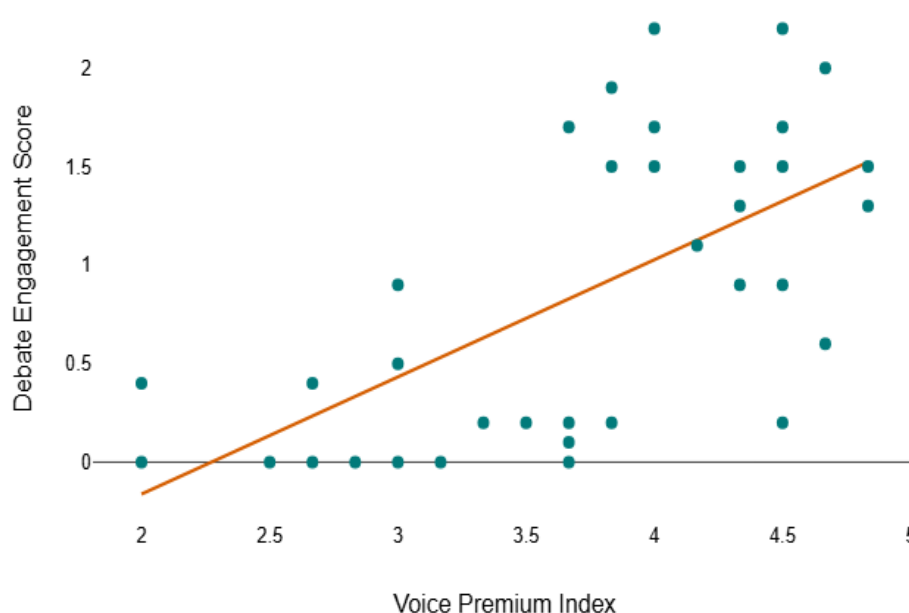


Figure 3. Regression Plot: Debate Engagement and Voice Premium Index

The regression plot shows a positive relationship between debate engagement and the Voice Premium Index. As debate engagement increases, VPI scores generally tend to increase, as indicated by the upward-sloping fitted regression line. Although individual observations vary around the line, the overall pattern supports the positive correlation and regression results reported earlier, indicating that greater engagement in debate activities is associated with higher perceived communication advantages.

4.8 Differences Across Demographic Groups

Additional analyses were conducted to examine whether Voice Premium Index differed across demographic characteristics. No statistically significant differences were observed between male and female participants ($p = .212$), suggesting that gender did not significantly influence Voice Premium scores within this sample.

Similarly, respondents from India and the United States did not show significant differences in Voice Premium Index ($p = .328$). The mean score for Indian participants was slightly higher ($M = 3.85$) compared with participants from the United States ($M = 3.58$), but the difference was not statistically significant. A one-way ANOVA examining differences across school types also indicated no significant differences in Voice Premium Index ($F(2,32) = 1.68, p = .203$).

These findings suggest that demographic characteristics alone were not strong predictors of voice premium; rather, skill-based experiences such as debate engagement and communication development were more influential.

4.9 Key Findings

The findings demonstrate that voice premium among students is strongly associated with communication confidence, leadership ability, and debate engagement. The developed Voice Premium Index showed high reliability ($\alpha = 0.88$), supporting its use as a measure of perceived communication advantage.

Correlation and regression analyses consistently identified debate engagement and academic performance as significant predictors of voice premium. Students with greater exposure to debate activities reported significantly higher communication-related advantages, with debate participation producing a large effect size.

In contrast, demographic characteristics such as gender, country, and school type did not significantly explain differences in Voice Premium Index scores. Overall, the findings suggest that structured opportunities for debate and public speaking may contribute substantially to developing communication confidence, leadership skills, and perceived academic and professional readiness among students.

5. Discussion

5.1 Debate Participation and Voice Premium

One of the principal findings of this study is that students who participated in debate activities demonstrated significantly higher Voice Premium Index (VPI) scores than students who had not participated in debate. The independent samples t-test revealed that debate participants achieved a mean VPI score of 4.15 compared to 3.23 among non-participants, with the difference being statistically significant and associated with a large effect size. This finding indicates that debate participation is strongly associated with improved communication-related competencies and supports the study's primary objective of examining the relationship between debate participation and communication development.

These findings can be explained by the nature of debate itself. Debate requires students to research information, construct logical arguments, communicate ideas persuasively, respond to opposing viewpoints, and think critically under time constraints. Regular participation provides repeated opportunities to practice these skills, gradually improving confidence, communication clarity, and leadership ability. Students involved in competitive debate are also exposed to structured feedback, teamwork, and public evaluation, all of which contribute to the development of stronger communication competence.

The findings are consistent with previous research. Lu and Mohamed (2025) reported that collaborative argumentation significantly improves learning engagement and critical thinking, while Sanders et al. (1994) found that argumentation instruction enhanced students' reasoning abilities and their capacity to evaluate weak arguments. Similarly, Amin et al. (2024) concluded that debating promotes analytical thinking, confidence, and communication competence by encouraging students to evaluate multiple perspectives before reaching conclusions. The present study extends these findings by demonstrating that the benefits of debate can be captured using a multidimensional measure such as the Voice Premium Index.

5.2 Role of Academic Performance

The results also revealed that academic performance was positively associated with the Voice Premium Index. Correlation analysis showed a significant positive relationship between academic performance and VPI ($r = 0.60, p < .001$), while regression analysis indicated that academic performance remained a significant predictor even after accounting for debate engagement.

One possible explanation is that students who perform well academically frequently engage in activities requiring analysis, problem-solving, classroom discussions, and written communication. These experiences strengthen reasoning ability and confidence when expressing ideas, thereby contributing to higher Voice Premium

scores. Students with stronger academic performance may also possess better organizational and critical thinking skills, enabling them to communicate ideas more effectively in both academic and extracurricular settings.

However, the findings should not be interpreted as suggesting that academic performance alone determines communication competence. Instead, the results indicate that academic achievement and communication skills appear to reinforce one another. Students who participate actively in discussions, presentations, and debate activities may simultaneously improve both academic performance and communication abilities, creating a mutually beneficial relationship.

5.3 Voice Premium as a Combination of Skills

A major contribution of this study is the development of the Voice Premium Index as a multidimensional measure of communication-related human capital. Rather than assessing communication through a single indicator, the VPI combines six complementary dimensions: communication clarity, persuasion ability, leadership, confidence in public speaking, critical thinking, and opportunity access.

The results demonstrated exceptionally strong positive relationships between the Voice Premium Index and both communication confidence ($r = 0.93$) and critical leadership ($r = 0.94$). These findings suggest that voice premium extends beyond the ability to speak confidently in public. Instead, it represents a broader combination of interpersonal, cognitive, and leadership competencies that enable students to express ideas effectively, influence others, evaluate arguments critically, and assume leadership roles.

This finding supports the theoretical foundation of Human Capital Theory, which argues that investments in productive skills generate measurable returns over time. In this context, debate and public speaking can be viewed as investments that strengthen multiple competencies simultaneously rather than improving communication in isolation. Students who develop these competencies are likely to experience advantages in classroom participation, leadership opportunities, academic presentations, and future professional environments.

5.4 Influence of Demographic Factors

Unlike debate participation and academic performance, demographic characteristics did not significantly influence Voice Premium Index scores. The study found no statistically significant differences based on gender, country of residence, or school type. Although minor differences in mean scores were observed between some demographic groups, these differences were not statistically significant.

These findings suggest that communication-related competencies are influenced more by opportunities for skill development than by demographic background. Students who actively participate in debate, public speaking, and leadership activities appear to benefit regardless of whether they attend public or private schools or whether they reside in India or the United States. This highlights the importance of providing equitable access to communication-focused educational opportunities rather than assuming that background characteristics determine communication competence.

Nevertheless, these findings should be interpreted cautiously because of the relatively small sample size. Although the study included respondents from different countries and educational backgrounds, larger and more diverse samples would improve the generalizability of the findings. Future research involving multiple schools and larger participant groups would allow more comprehensive examination of demographic influences on communication development.

5.5 Educational Implications

The findings have several important implications for educators, school administrators, and policymakers. The significant relationship between debate participation and Voice Premium suggests that communication-focused activities should be viewed not merely as extracurricular enrichment but as valuable educational experiences that contribute to students' overall development. Schools should therefore encourage greater participation in debate clubs, Model United Nations, public speaking competitions, youth parliaments, and presentation-based learning activities.

Teachers can also incorporate structured argumentation, classroom debates, and collaborative discussions into regular instruction to strengthen communication, critical thinking, and leadership skills across subject areas. Creating frequent opportunities for students to present ideas, defend arguments, and receive constructive feedback may improve confidence and communication competence while supporting broader academic development.

Furthermore, schools may consider assessing communication-related competencies alongside traditional academic achievement. Since employers increasingly value communication, collaboration, and leadership skills, integrating these competencies into school curricula could better prepare students for higher education and future employment.

5.6 Contribution of the Study

This study makes several important contributions to the existing literature. First, it introduces the Voice Premium Index (VPI) as a novel framework for measuring communication-related human capital among students. While previous research has examined confidence, critical thinking, or communication separately, the present study combines multiple dimensions into a single composite measure that captures the broader educational value of debate and public speaking.

Second, the study provides empirical evidence demonstrating that debate participation is positively associated with communication confidence, leadership, and perceived communication advantages. By integrating Human Capital Theory with communication education, the research extends existing literature beyond qualitative descriptions and offers a quantitative approach for evaluating the returns generated through communication-based activities.

Finally, the study highlights that communication competence is developed primarily through active participation and practice rather than demographic background. These findings contribute to ongoing discussions regarding the importance of experiential learning, debate education, and communication skill development within school curricula. The Voice Premium Index also provides a foundation for future research examining how communication competencies influence academic achievement, employability, leadership development, and long-term career outcomes.

6. Conclusion

This study examined if debate and public speaking activities can help to develop communication-related skills in students using the Voice Premium Index (VPI) as a multidimensional measure of communication advantage. This study, which was based on Human Capital Theory, examined the correlation among debate engagement, academic performance, communication confidence, leadership, and Voice Premium within a sample of 35 students from India and the United States. The study aimed to find out if the communication skills acquired in a systematic way in the extracurricular activities could be assessed as educational resources for the personal and scholastic growth of the students.

The results showed that the Voice Premium Index had a Cronbach's alpha of 0.88, suggesting good internal consistency, and thus reliability as a measurement tool for communication-related competencies. Debate participation was found to be significantly correlated with the Voice Premium Index scores, with students who had been involved in debate showing higher scores than those who had not been involved in debate. This indicates that debate engagement is positively related to communication clarity, persuasion ability, confidence, leadership and critical thinking. Correlation and regression analyses also showed that debate involvement and academic achievement were important predictors of Voice Premium, with communication confidence and leadership having particularly high relationships with the total index. Demographic variables (gender, country of residence, and type of school) however, did not significantly affect the Voice Premium score suggesting that the ability to communicate is of greater importance than demographic factors in students' communication skill development.

These results have a number of practical implications in the field of education. Debate, public speaking, Model United Nations, presentations, and other forms of communication should be considered as tools in students' development, not just as extracurriculars, at school. The implementation of the structured argumentation, presentation and collaborative discussion in the classroom could be useful to build communication, leadership and critical thinking skills in students that are needed in higher education and in the working world. To provide greater chances for students to share ideas and make arguments, and to join in meaningful discussions; to encourage the inclusion of debate and public speaking programs in schools, with support from school administrators and policies. The new Voice Premium Index is also an indication to educators about a possible framework for evaluating communication-related competencies instead of academic achievement.

The study has the following limitations, however. The findings are generalizable to larger student populations only to the extent that the sample was relatively small. Secondly, the study was a self-reported questionnaire-based study, which could have a potential individual perception or response bias. Third, the research was conducted through a cross-sectional design, so the results presented relationships between variables but could not prove causal relationships between the variables that were discussed, i.e. participation in debating and communication development. Therefore, the findings must be interpreted as indicative of an association, not as evidence of a direct effect of debate on the development of communication-related skills.

These findings should be extended to other larger and more varied groups of students in other educational systems and geographic areas. Research that incorporates schools from different countries, government and other institutions, and different socioeconomic backgrounds will enhance the generalizability of the results. On-going

study of students over a number of years would also be useful in understanding the effect of ongoing participation in debate and public speaking on communication, leadership and critical thinking over time. Further research could also adapt and validate the Voice Premium Index for various educational settings and investigate the connection between the Voice Premium Index and other measures of success, such as academic performance, employability, leadership skills and career success. This study gives a quantitative measure for the communication related human capital, which could serve as a basis for subsequent studies and a way to help students realize communication skills are one of the most important competencies to cultivate to prepare them for lifelong academic, professional, and personal success.

References

- Amin, R. I., Safiyah, A., Paul, M. E., Arham, A. F., Hassan, N. H., Nurwina Akmal Anuar, Mohd, Othman, N. K., Mohd, Rahim, A. A., & Salleh, A. R. (2024). Debating as an academic tool: Fostering holistic and critical thinking in higher education. *International Journal of Academic Research in Progressive Education and Development*, 13(4), 1722–1730. <http://dx.doi.org/10.6007/IJARPED/v13-i4/23617>
- Bharadiya, J. (2023). The impact of artificial intelligence on business processes. *European Journal of Technology*, 7(2), 15–25. <https://doi.org/10.47672/ejt.1488>
- Kolb, D. A. (1984). Experiential learning: Experience as the source of learning and development. In *Research Gate*. Prentice-Hall. https://www.researchgate.net/publication/235701029_Experiential_Learning_Experience_As_The_Source_Of_Learning_And_Development
- Lu, Z., & Mohamed, H. B. (2025). The effects of collaborative argumentation on learning engagement and critical thinking: An empirical study of processes and outcomes. *International Journal of Research and Innovation in Social Science*, IX(VIII), 3476–3486. <https://doi.org/10.47772/ijriss.2025.908000282>
- McAlister, S., Ravenscroft, A., & Scanlon, E. (2004). Combining interaction and context design to support collaborative argumentation using a tool for synchronous CMC. *Journal of Computer Assisted Learning*, 20(3), 194–204. <https://doi.org/10.1111/j.1365-2729.2004.00086.x>
- National Association of Colleges and Employers. (2025). Career readiness program development and validation. https://www.nacweb.org/docs/default-source/default-document-library/2025/career-readiness/nace-career-readiness-development-and-validation-december-2025.pdf?sfvrsn=1e53c2b6_3
- National Speech & Debate Association. (n.d.). In *National Speech & Debate Association*. Retrieved August 10, 2026, from <https://www.speechanddebate.org/>
- Rapanta, C., & Macagno, F. (2019). Evaluation and Promotion of Argumentative Reasoning Among University Students: The Case of Academic Writing. *Revista Lusófona de Educação*, (45), 125–142. <https://doi.org/10.24140/issn.1645-7250.rle45.09>
- Sanders, J. A., Wiseman, R. L., & Gass, R. H. (1994). Does teaching argumentation facilitate critical thinking? *Communication Reports*, 7(1), 27–35. <https://doi.org/10.1080/08934219409367580>
- van Gelder, T. (2015). Using argument mapping to improve critical thinking skills. *The Palgrave Handbook of Critical Thinking in Higher Education*, 183–192. https://doi.org/10.1057/9781137378057_12

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