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Creative thinking strategies in academic debate among university students

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Abstract: This study aims to examine creative thinking strategies in academic debate among university students by identifying the representation of convergent thinking, divergent thinking, and lateral creative thinking in the Indonesian Student Debate Competition. The study employed a qualitative descriptive design. The data were obtained from debate recordings available on the YouTube platform and collected through observation and transcription techniques. The data were analyzed using an interactive model consisting of data condensation, data display, and conclusion drawing and verification. The findings reveal that divergent thinking is the most dominant strategy, reflected in students' ability to explore broad ideas, shift perspectives, and build associations across issues. Convergent thinking supports the organization of ideas into logical, coherent, and decision-oriented arguments. Lateral creative thinking appears less frequently but contributes to challenging dominant assumptions, reframing issues, and producing non-linear perspectives. Creative thinking in academic debate functions as a strategic process that strengthens argument quality and discourse innovation. The findings provide insights for developing debate pedagogy and language learning practices in higher education.

Keywords: *Academic debate, Convergent thinking, Creative thinking, Divergent thinking, Lateral creative thinking.*

1. Introduction

The Indonesian Student Debate Competition provides an academic space that demands creative thinking skills through the formulation of original, relevant, and adaptive arguments to the dynamics of discourse so that language functions as the main medium of cognitive creativity through lexical choices, reasoning patterns, and argumentation structures [1, 2]. Recent developments in language education show the integration of digital technology and artificial intelligence to improve speaking skills, reduce anxiety, and strengthen learning motivation, shifting attention to the effectiveness of technological interventions [3]. Empirical findings related to AI support in academic presentations and confidence building show a tendency to use digital tools as structured, student-centered learning scaffolding in higher education [4]. Mapping speaking abilities that increasingly rely on explainable linguistic and multimodal features confirms the importance of making student debates the object of discourse analysis to explore representations of creative thinking in competitive academic situations [5].

Previous studies have shown that debates play a significant role in developing argumentation, reasoning, and language skills at various levels of education and scientific fields. An intervention study by El Majidi et al. [1] proved that teaching debates in a second language has a positive effect on the structure and quality of students' oral and written arguments, especially in terms of sub-arguments, rebuttals, elaboration, and persuasiveness. These findings are reinforced by Hogan and Dunne [2], who found that debate is effective as an ethical dilemma in improving the ethical reasoning of pharmacy technician students by increasing conceptual understanding and diversity of perspectives. A longitudinal study by Hasler et al. [6] confirms the role of language skills as an important foundation for social engagement and cognitive development from an early age. Brady et al. [7] expand on this understanding through neurocognitive findings linking early neural activity to language development.

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Meanwhile, Peng et al. [8] highlight the contribution of digital technology to strengthening speaking skills and language learning motivation.

Previous studies have shown a dominant focus on the effectiveness of debate as a pedagogical strategy for improving argumentation skills, ethical reasoning, language skills, and learning motivation, both through educational intervention design and quantitative and mixed approaches. These studies have not yet thoroughly examined the representation of creative thinking as a cognitive process manifested through linguistic practices and discourse strategies in competitive student debates, particularly at the university level in Indonesia. In addition, most studies place debate as a means of learning or developing language skills, rather than as an object of discourse analysis to reveal the dynamics of divergent thinking, convergent thinking, and lateral creative thinking. The novelty of this research lies in the interpretation of debate as a space for the production of academic discourse that represents creative thinking linguistically and argumentatively by utilizing authentic data from the Indonesian Student Debate Competition as a basis for qualitative analysis, thereby broadening the perspective of educational linguistics and cognitive creativity studies in the realm of student debate.

This study aims to identify and analyze the representation of creative thinking manifested through linguistic practices and argumentative strategies in Indonesian student debate competitions. This study contributes to the development of applied linguistic studies, particularly language education in the aspect of speaking skills, by broadening the understanding of the relationship between language, argumentation, and creative thinking in the practice of academic student debates. The research findings provide an empirical basis for the design of debate and academic literacy learning that is more oriented towards strengthening higher-order thinking skills through speaking skills in higher education. In addition, this study supports the achievement of the Sustainable Development Goals, particularly SDG 4, Quality Education, through the strengthening of creative, communicative, and critical thinking competencies as part of inclusive and sustainable higher education.

2. Literature Review

2.1. Divergent Thinking

Divergent thinking is a cognitive ability that allows individuals to generate a variety of ideas and alternative solutions through broad and non-linear exploration of ideas [9]. This process emphasizes flexibility of thinking, fluidity of ideas, originality, and elaboration so that responses to dynamic situations become more adaptive [10, 11]. The main characteristics are evident in the ability to link different concepts and build new perspectives through unusual creative associations [12, 13]. Its important role is evident in language education because it supports the production of varied and expressive discourse [13-15]. A learning environment that encourages free expression of ideas and positive affect contributes to improved linguistic creative thinking performance [16, 17]. The use of technology and a second language expands the exploration of ideas but still requires active human involvement to maintain diversity of perspectives [18, 19].

2.2. Convergent Thinking

Convergent thinking is understood as a cognitive process that narrows down ideas through logical and evaluative reasoning to achieve high coherence [20]. This process requires sorting information, assessing the relevance of evidence, and integrating ideas into rational and systematic conclusions [21, 22]. Its main characteristics are evident in the focus of attention, elimination of less relevant alternatives, and consistent justification of arguments in academic situations [23]. The evaluative dimension is related to inhibitory control that manages semantic flooding when selecting the best ideas [17]. The synthesis stage of modern creativity processes a breadth of ideas into useful designs through conceptual selection [24, 25]. Feedback-based learning environments reinforce constructive evaluation and decision-making accuracy [26, 27].

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2.3. Lateral Creative Thinking

Lateral creative thinking is a creative thinking pattern that shifts perspectives and dismantles conventional reasoning through non-linear associative leaps to generate unexpected ideas [28, 29]. This process enables the interpretation of problems through imaginative, alternative frameworks without relying on rigid logical sequences [30, 31]. Its characteristics are evident in the use of analogies, metaphors, and free associations to connect conceptually distant elements. Learning, play, and digital support environments enrich the spontaneity of shifting perspectives and expressing unusual ideas [32]. Debate practices utilize this pattern to present unique framing and persuasive reinterpretations of meaning [29, 31].

3. Methods

This study employs qualitative descriptive research, with the main data source being recordings of the Indonesian Student Debate Competition available on YouTube, representing authentic student debate practices. Data collection involved documentation techniques by downloading, listening to, and transcribing debate speeches relevant to creative thinking. Data analysis used an interactive model, including data condensation, display, and conclusion drawing/verification [33]. Data condensation was conducted through selecting and coding discourse units, presenting data as categorization and thematic mapping, and continuously drawing and verifying conclusions to ensure the research findings' consistency and validity.

4. Results and Discussion

4.1. Divergent Thinking

Convergent thinking represents a cognitive process that directs individuals toward selecting the most appropriate ideas through logical, evaluative, and focused reasoning. This pattern of thinking serves to control the breadth of ideas to produce arguments that are coherent, consistent, and academically accountable, as shown in data (1) to (9) below.

> *"The government must be willing and able to innovate and step out of its comfort zone because the community is growing due to rising birth rates and inflation."*
> *"When investing in high risk, when predators bankrupt a company, it is dangerous if the local government only tries and must be able to see how the risks will be in the future."*

Data (1) and (2) represent convergent thinking through efforts to narrow down ideas on the cause-and-effect relationship that is considered most relevant to support the argumentative position. The discourse in data (1) shows the selection of demographic and economic factors as a rational basis for encouraging government policy innovation, so that the argument is directed toward one logical conclusion. Data (2) shows risk evaluation as the basis for decision-making by eliminating the possibility of uncontrolled speculative actions. Both data show a process of idea selection that is oriented toward caution and policy rationality. This pattern reflects the integration of information to build focused, coherent arguments that are oriented toward systematic decision-making.

> *"Before taking action, we must first consider mechanization. The government is smart and will definitely consider mechanization, starting from the objectives, impacts, and outputs."*
> *"No one is considering how to improve and repair things while maintaining public trust."*
> *"To see how the government is focused on improving the welfare of the people in the region, it is supporting local MSMEs, which will increase regional income and become a manifestation of the region."*

Data (3) to (5) demonstrate convergent thinking, evident in speakers' tendency to focus arguments within a systematic, goal-oriented rational framework. In data (3), ideas are filtered through structured

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planning stages, emphasizing goals, impacts, and outputs as primary decision-making parameters. Data (4) reflects an evaluative process that narrows focus to a single crucial aspect, public trust, as a prerequisite for policy improvement, thereby eliminating less relevant alternatives. Data (5) shows the integration of economic and social ideas, centering the argument on supporting local MSMEs as the most logical means of enhancing regional welfare and income. These three data points illustrate the selection of ideas directed toward a single conclusion deemed most effective and realistic. This pattern indicates control over the breadth of ideas through rational, coherent considerations, reflecting the characteristics of convergent thinking in debate discourse.

> *"It would be better than writing a thesis, which generally not many people enjoy and is not in line with the output of the scientific sub-discipline."*

Data (6) reflects convergent thinking by narrowing the argument to one solution considered the most rational and applicable to the final study evaluation issue. The statement selects ideas by comparing the weaknesses of conventional theses and then narrowing down to alternative mechanisms based on subdiscipline needs as the main choice. The evaluative process is evident in the integration of output relevance, policy feasibility, and the role of educational authorities as the basis for decision-making. The speaker eliminates options considered less effective and focuses the argument on granting university autonomy as a logical conclusion. This pattern demonstrates characteristics of convergent thinking, oriented toward idea selection, coherence of reasoning, and clarity of policy direction.

> *"To see the reality of the problems in writing a thesis, it is best to apply high thinking skills that have been instilled through a time-tested curriculum."*

Data (7) represents convergent thinking through the narrowing of ideas in one direction of solution that is considered most relevant to the thesis issue as a final assignment. The statement shows an evaluative process by weighing the reality of academic problems and then focusing the argument on strengthening higher-order thinking skills through a proven curriculum. The selection of ideas is evident in the focus on reassessing the relevance of the thesis as a means of completing studies. The speaker integrates pedagogical and institutional considerations to produce coherent conclusions. This pattern reflects convergent thinking that is oriented towards rational assessment and targeted decision-making.

> *"In my opinion, this thesis represents long-term potential for future research and publications, which can be used as a reference for education and as a means of scientific knowledge in the future."*
> *"It will serve as a stepping stone and guide for all urban communities with smaller populations in the region, thereby creating a culture of equality that can be enjoyed by all."*

Data (8) and (9) represent convergent thinking through the centralization of arguments on long-term benefits as the rational basis for decision-making. The discourse in data (8) focuses on the function of the thesis as a means of research development and publication, so that ideas are directed toward one main value that is considered most relevant to academic sustainability. Data (9) shows the selection of ideas by focusing the argument on cultural equality and social integration as the expected outcomes of certain policies. Both data show the integration of objectives, impacts, and outcomes into a single coherent conclusion. This pattern reflects convergent thinking that is oriented toward filtering ideas and clarity of argumentation.

4.2. Convergent Thinking

Divergent thinking represents a creative thinking pattern that encourages broad exploration of ideas through flexibility, originality, and diversity of perspectives. This pattern allows for the

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emergence of alternative arguments, unconventional associations, and expansion of discourse meaning in debate practice, as shown in data (10) to (43) below.

"The government will enrich itself with investment knowledge based on existing funds and begin to identify which assets to invest in."
"The government will learn to invest and obtain significant incentives in order to get a higher return. As the government will not immediately allocate seventy percent of the funds directly to the community, it will try starting with five percent, ten percent, and fifteen percent."
"Finally, subsidies are being built more quickly. We are not saying that the opposition will not be provided with facilities and so on, but you will be limited."
"It's okay to have high-risk residual funds or DAD because there are structural reasons for this, namely that these are cold funds. If regional management increases, regional spending will also increase. These funds cannot be taken arbitrarily because the level of corruption is low, and so on."

Data (10) to (13) represent divergent thinking through the expansion of ideas that present variations in perspectives and non-singular policy scenarios. The discourse in data (10) shows the exploration of ideas by interpreting the government as a subject of investment learning, not merely a conventional budget manager. Data (11) shows the development of alternatives through gradual simulation of fund allocation with varying percentages as an experimental strategy. Data (12) presents an expansion of perspective by combining accelerated subsidies and facility restrictions as two possible simultaneous policies. Data (13) displays complex structural associations through the interpretation of high-risk funds as cold funds that can be managed flexibly. These four data points reflect the breadth of idea exploration and flexibility of reasoning, which are the main characteristics of divergent thinking.

"Logically, central and provincial government leaders will not know what the needs of the local community are, so it is better for local governments to be independent in developing their own regions so that the needs of the community can be identified and met."
"Innovation occurs when you have the power or ability to create something new, but the innovation you are talking about is something that already exists in other companies."

Data (14) and (15) show divergent thinking through the expansion of perspectives on the relationship between authority and the meaning of innovation. The statement in data (14) develops an alternative idea by shifting the center of decision-making from the central government to local governments as a strategy for meeting community needs. Data (15) displays a non-singular interpretation of innovation by linking individual creativity and adaptation practices from existing examples. Both data show flexibility in reasoning through linking different concepts and forming new perspectives on policy and innovation issues. This pattern reflects the exploration of diverse ideas that are not bound by conventional argumentation frameworks.

"For example, in Bali. Bali has many investors, so they have a large regional budget for development, but this also impacts taxes and other matters, and ultimately will return to the use of the regional budget."
"I think this is a lie because there are still many people in remote areas who do not get their rights, such as the rights of farmers who have been displaced, marginalized people who are completely invisible to the government out there."
"Every regional budget is used to optimize the development of the region, regional spending activities to use the budget for regional needs, and the fulfillment of community empowerment."

Data (16) to (18) represent divergent thinking through the development of recurring but expanded ideas from economic, social, and public policy perspectives. The statements in data (16) use specific

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regional examples to build associations between investment, taxation, and the cycle of regional budget use as alternative illustrations of development. Data (17) present a critical perspective by highlighting neglected marginalized groups, thereby expanding the spectrum of issues from macroeconomics to social justice. Data (18) develop normative ideas regarding the optimization of the APBD and community empowerment. This pattern of repetition with variations in focus demonstrates the flexibility of reasoning and breadth of idea exploration that characterizes divergent thinking.

> *"Many say that we feel these are useless because after graduation, there are many unemployed people. But the essence of this is not to say that a thesis can guarantee employment. Rather, after graduation, one must be able to create innovation, find work, or create jobs."*
> *"These will be used as benchmarks for the development of science in the future. For example, in the field of medicine, students are required to create certain innovations in treatment."*
> *"Students are idealized to be critical, and the creation of this scientific work in the form of a thesis is not a method or innovation to create critical individuals or students. However, it can be said that four years of university are determined solely by producing one written work."*

Data (19) to (21) show divergent thinking through the expansion of the meaning of the thesis function, which is not limited to a single purpose. The statement in data (19) develops the idea by separating job security and the essence of a thesis as a trigger for innovation, entrepreneurship, and the creation of new opportunities. Data (20) broadens the perspective by linking the thesis to long-term scientific development and cross-disciplinary applied innovation, such as in medicine. Data (21) presents a critical perspective that questions the reduction of the educational process to a single academic product. All three data points demonstrate the breadth of idea exploration and flexibility of reasoning that reflect the main characteristics of divergent thinking.

> *"The essence of education is not to commercialize students, for example, we are required to have soft skills or certain skills in order to be able to work in large companies, and so on. However, the true essence of education is to enlighten the nation, to create innovative, creative, and critical intellectuals."*

Data (22) represents divergent thinking through the expansion of the conceptual framework regarding educational goals that are not limited to the orientation of the job market. This statement develops the opposition between the idea of education as a means of commercializing skills and education as a process of forming intellectuals. The speaker associates education with intellectual values, innovation, creativity, and critical thinking as broader and more ideal alternatives. This broadening of perspective demonstrates flexibility of reasoning by combining ideological, social, and cognitive dimensions. This pattern reflects the exploration of diverse ideas that are not bound to a single definition, thus displaying the main characteristics of divergent thinking in debate discourse.

> *"A thesis only covers one title or subject and is discussed in general terms, so it does not represent what you have learned during your studies because it only focuses on one topic and is not very applicable to what you have learned in your courses, but only focuses on the completion of the thesis."*
> *"With this thesis requirement, it is clear that failure to complete the thesis results in many students becoming perpetual students on campus, a burden on the university, and even dropouts due to difficulties in completing this scientific work."*

Data (23) and (24) demonstrate divergent thinking through the expansion of perspectives on the academic and institutional impacts of thesis policies. The statement in data (23) develops criticism by linking the limitations of thesis topics to the underrepresentation of learning experiences during college. Data (24) expands on this idea by exploring further implications in the form of perpetual students,

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institutional burdens, and the risk of dropping out. Both data points demonstrate flexibility in reasoning by linking one academic policy to various structural and social consequences. This pattern reflects the broad and associative exploration of ideas that is a key feature of divergent thinking in debate discourse.

"And what needs to be understood is that this thesis must be approved by an expert lecturer or someone familiar with the subject matter being studied, and it is also a prerequisite for obtaining a degree."
"In our opinion, a university is an educational institution that used to be general in nature in junior high and high school but has now been specialized into certain majors, such as psychology, English literature, and others. There are two purposes for going to college: to study and to be able to work in accordance with one's major."
"Based on what is evident from habits and abilities often seen due to a world that demands innovation, creativity, and critical thinking, a thesis is an ideal form of evaluating learning outcomes."

Data (25) to (27) show divergent thinking through the expansion of arguments linking these to various academic, institutional, and social functions. The statement in data (25) develops ideas by combining aspects of scientific validation, the revision process, the formation of critical reasoning, innovation, and the strengthening of non-academic skills. Data (26) broadens the perspective by interpreting higher education as a space for scientific specialization that bridges learning objectives and work readiness. Data (27) links the demands of the modern world for creativity and criticism as the basis for evaluating learning through these. All three data reflect the breadth of idea association and flexibility of reasoning that are the main characteristics of divergent thinking.

"Writing this thesis involves many skills in the process or implementation of its preparation, namely writing, communication, critical thinking, reading, analyzing, and others that can be learned and acquired during the process of preparing this thesis."
"Indonesia has a situation where people are still conservative, and there are educational inequalities everywhere, resulting in different levels of reasoning and critical thinking. Therefore, this thesis becomes a fair national standard for all so that everyone receives the same treatment and authority in the implementation of education, especially in higher education."

Data (28) and (29) represent divergent thinking through expanding the meaning of a thesis from merely an academic product to a vehicle for multidimensional competency development and an instrument of educational justice. The statement in data (28) shows the exploration of ideas by linking the thesis writing process to various cognitive and communicative skills that develop simultaneously. Data (29) broadens the perspective by linking the thesis to the social reality of educational inequality and diversity in reasoning levels in Indonesia. Both data show a broad association of ideas between academic practice, social conditions, and national standardization principles. This pattern reflects the flexibility of reasoning and breadth of idea exploration, which are the main characteristics of divergent thinking.

"When you meet many different people, it opens your mind and gives you the opportunity to learn, build relationships, and find job opportunities."
"We don't believe in consumerism and that mentality because, first of all, the culture that is developed is not expensive but rather in line with their identity, so the adjustment can be progressive. When people have the same lifestyle, they will be happy because they feel happy with their freedom of expression."
"Ultimately, in this capitalist world, everyone can explore and express their true selves without having to follow the elite, who ultimately do not need to feel a sense of social class."

Data (30) to (32) represent divergent thinking through the expansion of ideas that link social, cultural, and economic structures as spaces for identity expression. The statement in data (30) develops

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the idea by connecting cross-class interactions in opening up insights, learning, and job opportunities. Data (31) broadens perspectives through alternative interpretations of consumer culture by emphasizing identity, value alignment, and expressive freedom as sources of collective happiness. Data (32) presents an exploration of the idea of the capitalist world as a space of plurality without the necessity of following an elite hierarchy. All three data points demonstrate the flexibility of reasoning and breadth of idea association that characterize divergent thinking.

4.3. Lateral Creative Thinking

Lateral creative thinking represents a pattern emphasizing shifting perspectives and breaking linear reasoning to generate unexpected ideas. This pattern allows ideas to emerge through free association, analogy, and reinterpretation of meaning, as divergent thinking is shown in data (47) to (51) below.

"To become entrepreneurs, you must be brave, you must try and dare to take risks."

Data (33) represents lateral creative thinking through a shift in perspective from a focus on security to courage as a prerequisite for entrepreneurial creativity. This statement breaks down linear thinking patterns that prioritize certainty by placing risk as a space for learning and innovation. The speaker associates the courage to try with the emergence of new opportunities that do not always follow conventional paths. This pattern of reasoning demonstrates the ability to leap from the norm of caution to the exploration of alternatives, thus reflecting the characteristics of lateral creative thinking in the debate discourse.

"The significance that the government should give is when you are going to put that much focus on achieving regional development with careful consideration, not just trial and error, but by improving performance and innovation."

Data (34) represents lateral creative thinking through a shift in perspective on development practices that are not limited to routine procedures. The statement combines the demands of mature thinking with the drive for innovation and performance improvement as an alternative policy approach. The speaker dismantles linear trial-and-error patterns by proposing a conceptual leap towards creative and results-oriented planning. This pattern of reasoning demonstrates the ability to connect rational evaluation with policy imagination, reflecting lateral creative thinking that produces unconventional ideas.

"The rights of farmers who are evicted for corporate development should not be violated, and farmers should be given space to maintain regional empowerment through the agricultural sector."

Data (35) represents lateral creative thinking through a shift in perspective from industry-based development to the empowerment of the agricultural sector as a strategic alternative. This statement dismantles the dominant pattern of reasoning that prioritizes corporate expansion by proposing the idea of protecting farmers' rights as a source of regional economic strength. The speaker connects the issue of social justice with sustainable development through a non-linear association between farmers' living space and regional independence. This pattern of reasoning demonstrates the ability to reconstruct development issues creatively and unconventionally, which is a key feature of lateral creative thinking in debate discourse.

"It is better and more appropriate for local government funds to be directly allocated to low-risk investments in the local community through the empowerment of MSMEs, so that the regional economy can be more robust and directly managed by the community."

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Data (36) represents lateral creative thinking through a shift in the policy framework from macro investment to community-based economic empowerment. This statement breaks down conventional budget allocation patterns by proposing the idea of channeling the regional budget directly into low-risk investments for local MSMEs. The speaker associates public fund management with community economic independence as an alternative path to regional growth. This pattern of reasoning demonstrates a conceptual leap from bureaucratic mechanisms to participatory and creative solutions, reflecting the characteristics of lateral creative thinking in the debate discourse.

"Why invest in something small that has no impact and no results at all?"

Data (37) represents lateral creative thinking by breaking the normative reasoning pattern that usually accepts small-scale investment as the first step in development. The statement uses a provocative rhetorical strategy to shake up common assumptions about the value of small investments. The speaker shifts attention from an incremental approach to demands for effectiveness and tangible results as the basis for decision-making. This pattern demonstrates a leap in perspective by questioning the normality of policies that are considered unproductive. This approach reflects lateral creative thinking because it encourages the reinterpretation of investment objectives through unconventional and disruptive perspectives.

Table 1.
Creative Thinking Aspects Percentage Coverage.

Coding	Percentage Coverage
Convergent Thinking	16.85%
Divergent Thinking	74.24%
Lateral Creative Thinking	7.49%

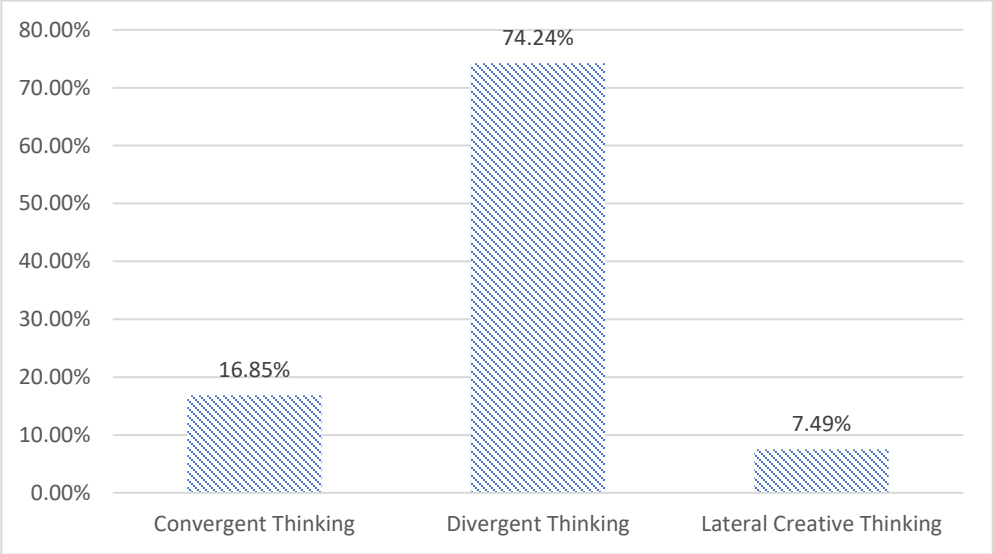

Figure 1.
Creative Thinking Aspects Percentage Coverage Graphics.

Table 1 and Figure 1 show the distribution of creative thinking aspects dominated by divergent thinking, with a coverage of 74.24%, far exceeding convergent thinking at 16.85% and lateral creative thinking at 7.49%. This pattern reflects the tendency of student debates to emphasize the breadth of idea exploration, variety of perspectives, and development of alternative ideas. The convergence of ideas remains present as a mechanism for focusing arguments, while lateral creative thinking appears limited as a form of unconventional perspective shifting.

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Table 2.
Items Clustered by Word Similarity.

	Convergent Thinking	Divergent Thinking	Lateral Creative Thinking
Convergent Thinking	1		
Divergent Thinking	0.719	1	
Lateral Creative Thinking	0.554	0.530	1

Table 2 shows the grouping of creative thinking aspects based on word similarity calculated using Pearson's correlation. The correlation value of 0.719 between convergent thinking and divergent thinking indicates a relatively strong lexical relationship, suggesting conceptual overlap in debate discourse practices. The correlation between lateral creative thinking and convergent thinking is 0.554, and with divergent thinking is 0.530, indicating a more moderate relationship.

This pattern illustrates that lateral creative thinking has more distinctive lexical characteristics and tends to stand apart more than the other two aspects.

The findings show that convergent thinking emerges as a thinking pattern that serves to narrow down ideas toward rational, coherent, and decision-oriented conclusions. These findings align with research by Peng et al. [8], which highlights increased speaking performance through podcast media, emphasizing the evaluative cognitive dimension in debate argument production.

The relationship between language skills, rational judgment, and decision-making also aligns with findings by Hasler et al. [6], which position language skills as the foundation of cognitive and social regulation, making convergent thinking crucial for maintaining focus, relevance, and consistency in academic debate discourse.

This pattern aligns with the concept of convergent thinking as a process of narrowing choices through logical and evaluative reasoning to produce academically accountable arguments [20, 21].

The findings show that divergent thinking dominates debate discourse through the breadth of idea exploration, flexibility of reasoning, and expansion of meaning that emerges from policy scenarios, social criticism, and cross-issue associations.

Compared to El Majidi et al. [1], who focused on improving the structure and quality of L2 argumentation through debate pedagogy, these findings highlight the dynamics of developing alternative ideas as the core of argumentative creativity. The diversity of opinions that emerged is also in line with the findings of Hogan and Dunne [2] regarding debate as a trigger for broad ethical considerations through a variety of perspectives.

This pattern aligns with the character of divergent thinking, which emphasizes originality, elaboration, and openness to new perspectives in discourse production [12]. Arguments develop variably and are not bound to a single line of reasoning [9, 34].

The findings show that lateral creative thinking emerges through disruptive shifts in perspective and the dismantling of linear reasoning patterns through risk-taking, reframing public policy, and critiquing dominant development assumptions. Compared to Peng et al. [8], who emphasize performance improvement through learning technology, these findings highlight rhetorical creativity and alternative framing in debates.

This trend is consistent with Byrge et al. [30]'s view that the laterality of ideas still requires human cognitive control despite technological developments. This pattern aligns with the concept of lateral creative thinking, where non-linear associative leaps, the use of analogies, and the reinterpretation of meaning produce unexpected ideas [28, 31].

5. Conclusion

Student debate practices represent three complementary patterns of creative thinking. Convergent thinking plays a role in controlling arguments through focused and coherent evaluative reasoning. Divergent thinking dominates discourse with its breadth of idea exploration, flexibility of perspective, and enrichment of argumentative meaning.

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Lateral creative thinking complements both through non-linear shifts in perspective that give rise to alternative framing, assumptive criticism, and rhetorical innovation in academic debate.

This research contributes to the development of applied linguistic studies, particularly language education in the aspect of speaking skills, by expanding the understanding of the relationship between language, argumentation, and creative thinking in student academic debate practices.

The research findings provide an empirical basis for designing debate and academic literacy learning that is more oriented toward strengthening higher-order thinking skills through speaking skills in higher education. Additionally, this research supports the achievement of the Sustainable Development Goals, particularly SDG 4, Quality Education, through the strengthening of creative, communicative, and critical thinking competencies as part of inclusive and sustainable higher education.

Future research could expand the study by integrating quantitative approaches to measure the relationship between creative thinking patterns and debate performance quality more objectively.

The development of rubric-based assessment instruments or computational discourse analysis has the potential to enrich the findings. Expanding the research context to different levels of education, disciplines, and debate formats is also relevant.

Longitudinal studies allow for the continuous tracking of the development of creative thinking patterns and their implications for language learning and higher education.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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