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Risks of Artificial Intelligence Intervening in College Writing Training: From Weakened Expression Ability to Shrunken Academic Thinking

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Abstract

Against the backdrop of digitalization and intelligentization in higher education, generative intelligence has been widely applied in college students' writing training, replacing their independent structure construction with preset frameworks and argumentation paths. This substitution causes problems like singular writing structures, blurred conceptual boundaries, and inertial argumentation, weakening students' expression ability and shrinking their academic thinking. To mitigate these risks, colleges and universities should adopt systematic governance: strengthen original text input, enhance in-depth writing training, and establish intelligent tool use norms, so as to maintain the cognitive function of writing training and foster students' in-depth and creative academic expression abilities.

Keywords

Generative intelligence; Writing training; Expression ability; Academic thinking

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1. Introduction

Against the backdrop of the comprehensive advancement of digitalization and intellectualization in higher education, generative intelligence has been widely involved in college students' writing training, exerting a profound impact on writing structures, expression methods, and thinking paths. Writing should inherently rely on reading, understanding, and reorganization to form structures, but generative tools pre-provide paragraph frameworks and argumentation paths, leading students to gradually lose the ability to construct structures in writing.

To address this trend, colleges and universities need to build a systematic governance path from aspects such as original text input, in-depth writing training, cultivation of conceptual and argumentative abilities, and norms for intelligent use [1]. By restoring the writing chain, strengthening structural awareness, and consolidating value judgment capabilities, we can effectively mitigate the risk of thinking shrinkage caused by writing structure substitution and help students redevelop in-depth and creative academic expression abilities [2].

2. Theoretical basis of generative intelligence's substitution for college writing structures

2.1. Generative intelligence replaces students' writing construction activities with structural stability

Traditional writing training relies on students' understanding, screening, and organization of text materials, gradually forming complete arguments through continuous refinement of language and logical structures. The process of writing construction itself is a thinking training, serving as an important link in understanding problems, analyzing structures, and forming judgments [3]. With the intervention of generative intelligence, this process is significantly compressed. Tools pre-provide paragraph structures, logical sequences, and argumentation frameworks, allowing students to bypass construction activities and directly engage in content filling or sentence modification [4]. Structural stability has become one of the core advantages of generative intelligence. By statistically analyzing a large number of corpora, the system forms common writing patterns and reuses them across multiple problems and scenarios. This stable structure can quickly provide formally standardized content, but it also deprives students of the opportunity to form structures through thinking. When structures stem from the model's default output rather than conceptual introspection and logical clarification, the subjectivity of writing training dissipates. Structure substitution not only eliminates the complexity of the writing process but also weakens students' ability to handle contradictions and reorganize viewpoints in writing.

2.2. The operational foundation of structure substitution theory lies in corpus statistics and expression inertia

The basic mechanism by which generative intelligence generates text is statistical learning of corpora to extract the most representative expression patterns. The system tends to select structures that are most familiar to the audience, most semantically stable, and most widely applicable to ensure the coherence and universality of the output. In other words, the model's writing is an expression inertia based on the most probable structures. This inertia has dual effects in college writing. On the one hand, students easily accept this structure because of its clear logical sequence, natural language connection, and familiar expression method. On the other hand, this structural inertia will gradually replace students' own ability to form structures, making them rely on the default framework provided by the generative system [5]. Writing structure is not a simple arrangement of paragraphs but the result of the interaction between knowledge, logic, and language. When these processes are pre-completed by inertial structures, students no longer understand structures through disassembling and reorganizing problems but passively accept the system's arrangements. Over time, thinking about writing structures ceases to occur, and expression becomes a fill-in-the-blank activity. The profound impact of structure substitution lies in the fact that it not only acts on the expression level but also interferes with the way ideas are generated.

2.3. Structure substitution changes the cognitive nature of writing training and reshapes thinking paths

Writing is not only an expression tool but also a process of cognitive construction. Through continuous refinement of concepts, reorganization of materials, and advancement of arguments in writing, students develop a deep understanding of problems. The intervention of generative intelligence transforms writing from a cognitive activity into structure replication, leading to substantial changes in students' thinking paths. Structure substitution makes writing no longer a task requiring thinking, but one of selection and integration. When writing, students rarely experience key steps such as self-questioning, logical conflict, and conceptual reconstruction. These steps are the core of academic training and necessary conditions for thinking growth. When these conditions are omitted, writing training loses its cognitive function. Structure substitution also gradually reshapes students' writing expectations. Accustomed to relying on convenient models, students gradually weaken their sensitivity to structural differences, no longer considering the different theoretical positions represented by different structures, nor recognizing the analytical frameworks hidden behind structures. The form of writing is retained, but its significance is diminished. The underlying logic of structure substitution is that the dominant position

in writing is transferred to the model, with students gradually becoming users rather than constructors of structures.

3. Structural manifestations and underlying logic of weakened writing expression ability

3.1. The singularization of writing structures leads to the gradual loss of hierarchy in expression ability

After frequently using this structure, students will gradually regard it as the default writing method. Under this premise, writing is no longer an activity that requires understanding and organizing meaning but seems to be easily completed by applying models. Logical relationships between paragraphs are replaced by stylized connections, and the internal tension between viewpoints appears weak due to the lack of natural transitions. Writing gradually presents a flattened structure, lacking in-depth analysis and rich argumentative layers. The weakening of hierarchy is not only reflected in the surface of logical structures. A bigger change is that students no longer present problems by constructing hierarchies but rely on established frameworks provided by the model [6]. Logical progression is no longer based on students' analysis of materials but is completed within automatically generated structures. Language becomes a tool for filling structures, writing becomes an act of content embedding, and expression ability thus shifts from internal logical generation to external model replication—depriving students of the opportunity to develop thinking through writing. Over time, expression ability will be significantly weakened.

3.2. Blurred conceptual boundaries undermine the accuracy of arguments and theoretical clarity

Concepts form the foundation of theoretical writing: the clearer the concept, the more stable the argument; the more blurred the concept, the more confusing the discussion. An important task of writing training is to enable students to define conceptual boundaries, distinguish conceptual connotations, and understand hierarchical relationships between concepts. However, to maintain adaptability across multiple scenarios, generative intelligence tends to use vague and generalized conceptual expressions.

Weak conceptual cognition exhibits distinct structural characteristics. First, the use of concepts becomes overly broad: students frequently use concepts with excessively wide scopes in writing but fail to clarify their theoretical boundaries. Second, the definition of concepts is lacking: many key concepts should be clarified at the beginning of the article or during the argumentation process, but students overlook this step due to reliance on generated content. Third, theoretical positioning is unclear: concepts have different meanings in different theoretical systems, but students struggle to identify their theoretical sources when using generative content, leading to confused concept application. A direct consequence of blurred conceptual boundaries is the decline in theoretical clarity. Ambiguous concepts prevent arguments from establishing a stable starting point and leave logical chains without solid support. While students' discussions may seem rich, they actually lack theoretical depth. The erosion of conceptual boundaries further weakens students' ability to identify theoretical differences, making it difficult for them to judge the internal tension between different viewpoints. In academic training, conceptual understanding is the core link in developing analytical ability; once conceptual awareness is weakened, writing can no longer carry theoretical thinking, nor can it foster genuine academic competence [7]. This phenomenon is essentially a form of conceptual shrinkage caused by structure substitution.

3.3. The inertia of argumentative structures shrinks thinking into fixed models

Argumentative structure is the link in writing training that best reflects the depth of thinking and is an important path for developing academic ability. Traditional argumentation requires students to construct logical chains around problems, including proposing viewpoints, analyzing materials, introducing comparisons, identifying counterexamples, and summarizing conclusions.

Inertial argumentation exhibits three distinct characteristics. First, the logical sequence is highly unified: arguments follow a fixed process, making the content inflexible. Second, argumentative methods are

repetitive: students continuously use similar reasoning methods without adjusting structures according to the characteristics of the problem. Third, the advancement of viewpoints lacks variation: there is a lack of necessary reflection, revision, and tension. The resulting arguments are stable but impoverished. When argumentative structures are generated by templates rather than logical analysis, students' thinking is naturally confined within limited frameworks [8]. The root cause of thinking shrinkage is that writing no longer compels students to confront contradictions, resolve conflicts, or engage with complexity. Argumentative inertia reduces writing to a single-line operation rather than a structural exploration. Students lack opportunities to challenge viewpoints and struggle to develop comprehensive analytical abilities. As inertia strengthens, individuals' thinking space narrows, the depth of intellectual activity declines, and the abilities of writing expression and academic judgment weaken simultaneously [9]. This inertia also forms a self-reinforcing mechanism: the more students rely on generated structures, the harder it becomes for them to construct their own; the more unified the structures, the harder it is for thinking to break through.

4. Governance paths for colleges and universities to address writing structure substitution and thinking shrinkage

4.1. Strengthening original text input and rebuilding independent structural awareness

The fundamental reason for generative intelligence to substitute writing structures lies in the singularity of input materials and the convenience of structure generation. To break this predicament, the key for colleges and universities is to rebuild an original material input system, awakening students' structural awareness through in-depth study of classic texts. Original texts, especially academic classics and theoretical works, carry rigorous ideological depth, high-density conceptual systems, and complete theoretical structures—they are not mere collections of scattered viewpoints [10]. Through word-by-word and sentence-by-sentence study, students can intuitively perceive how structure serves thought: how arguments are refined from phenomena, how logic progresses layer by layer, and how paragraphs revolve around core ideas. This immersive reading allows structural awareness to develop naturally. Therefore, courses should significantly increase the proportion of classic literature reading, covering not only core works in the major but also interdisciplinary theoretical texts. This enables students to experience the complexity of structural changes with themes and contexts through the interplay of different texts, gradually enhancing their perception of writing logic. Teacher guidance is crucial: targeted structure identification training should be designed—such as marking topic sentences, sorting out logical chains, and disassembling paragraph relationships—to help students understand that "structure is the framework of thought" [11]. Only by first learning to identify can students grasp the underlying laws of structure construction, understanding that structure is not created out of thin air but is an accurate representation of ideological logic. When students truly understand the origin and value of structure, writing is no longer the application of superficial frameworks but logical expression based on genuine understanding, and the foundation for generative intelligence to substitute writing structures naturally collapses.

4.2. Promoting in-depth writing training and strengthening argumentative and conceptual abilities

To avoid thinking shrinkage caused by structure substitution, colleges and universities should rebuild writing chain training, including concept definition, argumentation advancement, structure organization, and reverse revision. Concept training is the foundation of writing, focusing on strengthening students' awareness of conceptual boundaries. Many writing problems stem from vague and ill-defined concepts, leading to arguments losing their fulcrum. Colleges and universities can offer specialized concept discussion courses to enable students to accurately grasp the connotations and extensions of core concepts and establish a stable theoretical analytical framework. Clear concepts are a prerequisite for clear arguments; only by clarifying basic concepts in writing can subsequent argumentation and structure construction be targeted, avoiding empty framework application. Argumentation training needs to break the constraints of templated thinking and cultivate multi-perspective thinking abilities [12]. Through case analysis, comparison

of different academic viewpoints, and dissection of classic texts, teachers can guide students to explore multiple argumentation paths for the same problem. Phased writing tasks—from fragmentary argumentation to complete essays—allow students to gradually understand the internal logic of argumentation and develop independent critical thinking skills. Restoring the complete writing chain is equally important: students need to experience the entire process from material collation, problem refinement, language construction, to reverse revision. Colleges and universities should emphasize the process nature of writing, abandoning the evaluation model of "only examining final submissions." Through process assessment, phased feedback, and revision logs, students are guided to value every writing link [13]. When students experience writing as a dynamically improving process rather than static structure-filling, they can proactively break free from tool dependence and achieve dual improvements in writing ability and critical thinking through comprehensive thinking training.

4.3. Establishing norms for intelligent use and forming a healthy learning ecology

Technical usage norms are an important strategy for addressing structure substitution. Colleges and universities should establish clear norms for intelligent writing to help students understand the boundaries of tools [14]. A clear writing norm system should be established, requiring students to indicate the scope of use of generative intelligence tools in all submitted writing outputs, clearly defining independently conceived core content and tool-assisted reference parts, and delineating the boundaries of tool use at the institutional level. Norms should emphasize the original nature of writing and the core value of structure construction, guiding students to recognize that writing is a process of ideological expression and logical organization—rather than simply splicing model output results—and avoiding reducing academic writing to a "fill-in-the-blank" task dependent on tools. In addition to rigid norms, it is more important to build an open and inclusive healthy learning ecology. By establishing academic writing learning communities, organizing regular writing seminars, and building interdisciplinary writing exchange platforms, students are provided with spaces for diverse expression. Interdisciplinary exchanges broaden ideas for structure construction. An open learning ecology allows students to experience the interactivity and growth-oriented nature of writing, proactively breaking free from the singular expression inertia brought by tools, and enhancing their ability to resist structure substitution and maintain thinking vitality. At the same time, intelligent application literacy education needs to be established to enable students to understand the principles of model generation, structure sources, and corpus biases [15]. With an understanding of the mechanism, students will use tools more cautiously, thereby maintaining structural awareness and value judgment capabilities.

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