

Original Paper

Fostering English Thinking among English Majors through Deep Learning: A Pedagogical Design with Inverted Sentences

Jingjing Tian^{1*} & Chuna Yuan¹

¹ Guangzhou College of Commerce, Guangzhou, China

* Corresponding Author, School of Foreign Languages, Guangzhou College of Commerce, No. 300 Zhishi Avenue, Huangpu District, Guangzhou, Guangdong Province, China. Tel: 13889900126. E-mail: 34277815@qq.com

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Abstract

The lack of English thinking has become a major bottleneck hindering further improvement in English majors' language proficiency. Grounded in deep learning theory, this research constructs a 5A teaching model, which consists of five closely linked phases, including Appreciation (perception), Abstraction (cognition), Arrangement (decision), Action (application), and Assessment (evaluation), and applies the model to the design of teaching inverted sentences. This paper elaborates on the teaching procedure, using inverted sentences as an example, to demonstrate how the 5A model can be operationalized in a grammar lesson to train English majors' ability to think in English.

Keywords

English thinking, deep learning, 5A teaching model, inverted sentence, English majors

1. Introduction

What exactly does it mean for English majors to “Think in English”? Through our teaching experiences, we have started to see this less as remembering rules or increasing vocabulary but more as an internalized ability to organize ideas, reason, and express ideas efficiently in ways that sound ‘natural’ in English. The capability is regarded as a core goal of education for English majors. In the course of teaching, we find that many students, even after many years, write and speak English with clear traces of Chinese syntax; their word order, their choice of connectives, even their sentence rhythms have (some) L1 influence. It appears that they have grasped English but have failed to fully switch over to thinking in it.

This shortcoming is especially evident in grammar instruction. Grammar teaching focuses more on rules rather than on cognition. Although students can recite grammatical structures, they may not be able to use them in writing and speaking. They know the rule (declarative knowledge) but lack the skill to use it automatically and correctly (procedural competence). This gap between knowing what to do and being able to do it means we must construct a teaching model that gets students thinking in English.

2. The Construction of a Deep Learning-based 5A Teaching Model**2.1 The Definition and Features of Deep Learning**

Marton and Säljö (1976) introduced the concept of deep learning to distinguish between two approaches to learning. A surface approach to learning involves simply memorizing what one hears, while deep learning means asking questions, gaining understanding, and making connections between one’s existing knowledge. On this foundation, Guo Hua (2016) offers a more educational definition, stating that deep learning is a meaningful process under the necessary guidance of the teacher, whereby students take on challenges with meaningful content, feel a sense of accomplishment, and make measurable progress.

For this study, which aims to cultivate English majors’ ability to think in English, deep learning is defined as meaningful, active learning characterized by higher-order thinking. Learned knowledge cannot be represented in a context-free manner; it must be embedded in context. English knowledge and skills should not be acquired in a fragmented, isolated manner. The goal of language education should not simply be to enable students to use language to do things. Rather, through developing language ability, students should become conscious of the cultural knowledge and meanings that this language carries. They should also engage in in-depth analysis, comparison, and evaluation of the ways of thinking it reflects. This involves studying the language’s grammar, vocabulary, context, modes of thought, cultural orientations, conceptual elements, and emotional values. Such higher-order thinking

develops and strengthens skills such as critical thinking, value formation, and an English thinking pattern. Moreover, with increased language practice, they can form the habit of thinking in English.

Many important aspects can be derived from the definition. Firstly, Deep learning is active, not passive. In addition, it consists of higher-order cognitive analysis, comparison, evaluation, and internalization, and not mere recall. Third, learning is not limited to linguistic forms; it also includes the culture-bound meanings, values, and patterns of thought that the forms encode. Learning consists of inseparable language, culture, and thinking.

This understanding aligns closely with Guo Hua (2019)'s five defining features of deep learning. These are association and structure: linking the new with the old; classifying and organizing what is learned; essence and variation: getting the essence of what to learn and seeing its variations; activity and experience: engaging students in activity that is a meaningful personal experience; transfer and application: utilization in new settings; value and evaluation: developing the ability to ask "why?" and "how?" and making sound judgments.

2.2 The 5A Teaching Model

The 5A teaching model presented in this study is built upon the five attributes of deep learning proposed by Guo Hua (2019). The 5A model has five components, each corresponding to one of the five features described. The result is a set of practical actions that turn theoretical principles into classroom practice. For instance, in language teaching, the principles get translated into practical activities.

Appreciation: Association and Structure. The first characteristic of deep learning is linking new knowledge to what learners already know and organizing knowledge thematically. Learners engage with the target language feature in a meaningful context, relating new content to prior knowledge. Pre-class preparations, such as reading or watching videos, prepare students for guided learning tasks and enable deep processing. When instructing grammar, we introduce the target structure in context. Learners are not presented with the rules of grammar in a vacuum; rather, they experience it within the constraints of a meaningful text. Learners make associations with what they already know and with other knowledge structures. Through this, they gradually begin to see how it fits into a greater structural framework.

Abstraction: Essence and Variation. This phase relates to the second feature of deep learning, namely understanding what to learn and how to manifest it. Students must be encouraged to go beyond mere awareness: they must disentangle the central ideas from incidental ones. We use questioning strategies to help learners uncover the underlying rules of the target structure. Students likewise contrast the lexical and syntactic modes in Chinese and English, hence identifying basic characteristics. As they work with both standard and non-standard examples, they differentiate essential rules from variations, which implies that they are able to recognize the same grammatical principle in different contexts. This process encourages flexible and transferable understanding that characterizes deep learning.

Arrangement: Activity and Experience. This part represents the third element of deep learning, i.e.,

students' involvement in active, experiential learning. The learners apply the rules and patterns they have identified to action-based tasks that require active decision-making and personal involvement. By performing sentence transformation, error correction, translation exercises, and other activities, the students do not passively receive the rules. They actively work with the rules and thus experience applying knowledge to concrete tasks. This hands-on engagement creates a meaningful personal experience of the target structure, guiding students from abstract understanding to practical usage. Completing these tasks generates satisfaction that further strengthens learning motivation.

Action: Transfer and Application. This phase reflects the fourth feature of deep learning: the ability to apply what has been learned in new situations and implement acquired skills in practice. Students apply their knowledge in communicative, collaborative tasks that require spontaneous language use and creative problem-solving. Through activities such as storytelling chains, interviews, and drama, students use grammatical structures in realistic exchanges. Such activities extend far beyond controlled practice as they require students to use grammar knowledge in new contexts. At this stage, knowledge becomes practical competence, and students begin to think in English spontaneously rather than consciously constructing sentences by applying rules.

Assessment: Value and Evaluation. This stage relates to the fifth characteristic of deep learning, which involves questioning, challenging, and making reasoned judgments about what has been learned. Self-assessment and peer assessment help learners to evaluate their own learning outcomes and develop metacognitive awareness. They examine the content of various texts, critique cultural content, and reflect on their own learning. Through this activity, students learn to monitor their thinking, develop sound values through critical engagement with cultural materials, and regulate their own learning. This phase makes the learning experience more than functional; it must also help pupils become self-directed, reflective learners.

The 5A model's five stages constitute a self-reinforcing cycle. Each cycle of Appreciation → Abstraction → Arrangement → Action → Assessment fits into the next cycle and gradually fosters the habits of thinking in English. The model is not linear; it is iterative. Students move through the phases, circle back to earlier phases with a deeper understanding, and gradually internalize both the grammatical structures and the thinking processes that they represent.

3. The Application of the 5A Model to Inverted Sentence Instruction

3.1 Design Principles for Grammar Instruction

The above 5A teaching model is useful for enhancing lessons to foster English thinking using deep learning. This model converts the usual method of presenting rules and mechanical drills into a somewhat flexible process when applied to grammar teaching. Essentially, each stage of the framework targets distinct areas of grammar acquisition and thinking development in a means-ends manner.

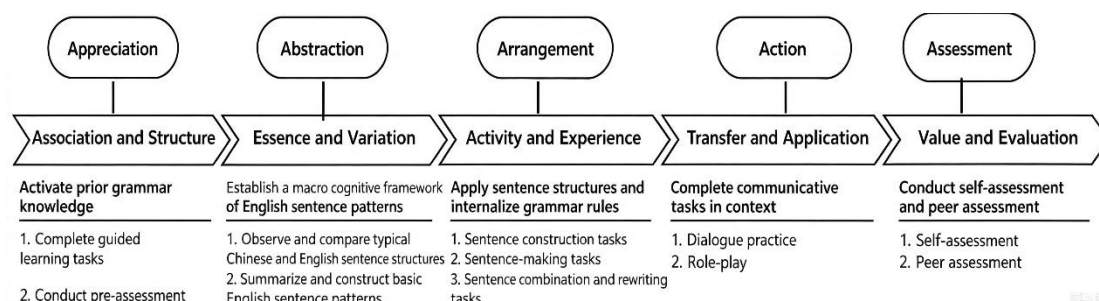


Figure 1. The 5A Model for Grammar Instruction

In the Appreciation phase, teaching does not begin with explicit rules. We do not simply teach a grammatical structure or function explicitly. Instead, we activate students' prior knowledge through meaningful exposure. For example, we may have the students read or listen to authentic texts that contain the target structure. Learners see the grammatical form in context and appreciate how it works and looks. This first step creates associations between what the children know and what they are going to learn, leading to greater cognitive engagement.

During the Abstraction phase, learners progress from sensory perception to analytical reasoning. By observing patterns and comparing the target structures with equivalent expressions in their L1, they have to make inferences and draw conclusions about the rules for themselves. The use of this inductive process calls for higher-order thinking such as analysis, comparison, generalization, etc., which assists students in constructing a coherent mental model of the grammatical system rather than merely storing isolated rules in memory.

In the phase of "Arrangement", learners move from understanding to controlled use. The tasks are structured and require intentional grammatical choice and appropriateness. Such activities (sentence rewriting, error correction, or translation exercises, for instance) ensure that rules are internalized through active, not passive application. Learners begin to recognize when a grammatical rule is applicable, shifting from declarative knowledge to procedural knowledge.

The Action phase prompts learners to utilize more communication. At this stage, attention no longer focuses on grammar; grammar becomes an instrument for achieving communicative tasks. Learners need to produce the target structure spontaneously, without conscious planning, during collaborative tasks and authentic interaction. Through constant practice, they slowly develop the automaticity characteristic of real English thought.

Ultimately, the Assessment stage encourages students to reflect on the learning cycle. Through self-assessment and peer assessment, students monitor their progress and remaining difficulties, and develop the metacognitive awareness needed for independent learning. Learners are encouraged to take a critical look at themselves, critically evaluate the content, and take ownership of their own learning.

What follows is a sample lesson plan that implements this five-step framework to teach inverted sentences, a structure that is difficult for students to master and that offers rich opportunities to

illustrate the thinking patterns of English. The design shows, phase by phase, how the model is put into practice through concrete classroom activities and how it works as an integrated whole to develop grammatical competence and the habit of thinking in English.

3.2 Inverted Sentences as a Vehicle for Cultivating English Thinking

There are two main types of English inversion. Full inversion occurs when the complete verb phrase moves before the subject. For example, in the sentence “Here comes the bus”. There is partial inversion (sometimes known as subject-auxiliary inversion), where an auxiliary or modal verb comes before the subject while the main verb remains in position, as in *Never have I seen such a sight*. When certain elements take the initial position of the sentence, they trigger partial inversion. The relevant elements are negative adverbials (e.g., *never*, *seldom*, *hardly*, *not only*, *not until*), restrictive adverbials (e.g., *only* + adverbial), and some comparative conditional patterns such as *so...that*, *had I known*.

For English majors, having a good command of inversion involves far more, however, than simply memorizing a list of triggers or the rule that an auxiliary must be fronted. Having identified the syntax involved, it is equally important – in fact, it is what makes this structure truly useful – to have an appreciation of its pragmatic functions. Inversion, for example, can signal new or contrastive information, add emphasis, or create a formal/literary tone. Awareness of pragmatic functions can help learners choose words and structures appropriate to specific contexts.

What makes inverted sentences an exceptionally effective tool for developing English thinking? There are three related reasons. Using inversion correctly requires learners to abandon the default subject-verb-object order. This challenges processing patterns that learners have internalized from their first language and promotes cognitive flexibility by changing the default behavior of learners. The second reason concerns function: students must see that inversion is a genuine rhetorical choice with communicative purpose, not an arbitrary rule. Third, at the discourse level, appropriate use of inversion depends on attention to information flow, textual cohesion, and stylistic register. The three dimensions, namely Syntactic Restructuring, Pragmatic Awareness, and Discourse Sensitivity, correspond to the three main challenges that our 5A model is aimed at addressing, namely: moving beyond superficial language learning to real English thinking, changing the passive reception of knowledge to the active habit of thinking, and extending practice beyond inauthentic drills to reflective metacognitive learning.

3.3 A Pedagogical Design of Full Inversion with the 5A Model

A specific lesson is designed for teaching full inversion to first-year English majors using the 5A model we have just laid out. The design follows the principles explained in 3.2 and draws materials from Unit 8, Book 1 of Contemporary College English: “Maheegun My Brother”. The passage is about a wolf cub that a young boy saves and later reunites with its rescuer in the wild. The text is chosen because of its repeated full inversion. It provides an authentic context to show both the structure and function of inversion. In addition, the repeated instances make it easy for the students to do the textual analysis and communicative practice, which enables English thinking.

3.3.1 Target Learners

This course is conducted for the first-year English major students at Guangzhou College of Commerce. We have monitored their performance in the translation sections of unit tests, and the data reveal that 60% of students have consistently produced sentences with erroneous subject-verb agreement, missing subjects, or incorrect word order. This suggests that they have not yet developed the habit of thinking in English. English writing and speaking by Chinese learners is often characterized by imposed Chinese sentence patterns, resulting in confused word order and missing subjects and connections. Another issue is that many of them believe they already know the grammar points presented in the textbook because they learned them in high school. Unconsciously, they do not see that whatever they learned earlier was at a surface level. They can spot an inverted sentence when they read one, but when they have to produce one, they either make errors or avoid the sentence structure altogether. The third problem is all about confidence, or rather the lack of it. Many students know their weaknesses well but feel nothing will improve no matter how much they try. Consequently, they stop attempting. This low level of engagement, in turn, leads to low achievement, and the cycle continues.

3.3.2 Learning Objectives

In this 80-minute session, we will aim to achieve the following objectives: In terms of knowledge of inversion and inversion structure, students can understand the types and structural features of inversion and grasp its pragmatic functions. In terms of capability, we expect them to use inversion in speaking through group discussions and oral PK games, in writing through a sports event report including inverted sentences, and in translation by translating from Chinese to English. As far as thinking is concerned, they are expected to develop the thinking mode of English by comparing Chinese and English expression habits in translation exercises and mind-mapping activities, and to develop meta-thinking through language output and teamwork. In terms of competency development, the learners are expected to develop the habit of thinking in English through language output and to develop teamwork and competitive spirit through group activities.

3.3.3 Teaching Procedures

The lesson is intended to be taught in two 40-minute periods and follows the five phases of 5A.

Stage 1: Appreciation—contextualized exposure (12 minutes)

The class begins with a short “warm-up”: they listen to “Blue Is the Colour” and note down the line “Blue is the colour, football is the game,” which contains a full inversion structure. This is not meant to be analyzed yet; it simply gets them thinking about word order.

Next, we turn to the preview homework. Before class, students were instructed to translate several Chinese sentences into English. They were also asked to submit their translations via the Chaoxing platform. Such sentences require inversion. Those sentences begin with there, here, down, up, never, and other locative adverbials. We demonstrate a few students’ translations, point out common errors, and then provide the best translations.

Next, we ask, “What differences can you notice in the word order of these translations? How do they

differ from the typical English sentence patterns with which you are familiar?” Students are invited to respond and share their views. This brief discussion directs students’ attention to inversion.

At the same time, because students see their own attempts look markedly different from the standard versions, they do experience a moment of cognitive dissonance. In that sense, they can somehow “feel” something is wrong, but do not quite know why yet. Together, the preview task and in-class feedback activate prior knowledge and prepare the ground for the more demanding work that follows.

Stage 2: Abstraction—rule discovery (25 minutes)

After we organize the class into groups of four or five, their first task is to find inverted sentences in the text “Maheegun My Brother”. For instance: Gone was the puppy-wool coat; on the top was the clear outline of a great wolf; and then came the clear dawn. After they have discovered them, we give them three questions to debate.

1. What do these sentences have in common in terms of word order?
2. Are you able to categorize them into various types? Use a mind map to depict the classification.
3. Why might a writer opt for this arrangement of words rather than the conventional order? What impact does it create?

Groups work on their mind maps and discuss the questions. The teacher listens to their conversations and steps in with suggestions or clarification when necessary. They move around the classroom. After about 15 minutes, the teacher invites groups to share their ideas and writes them on the blackboard. These include the structural features of full inversion (verb + subject; complement + verb + subject; adverbial + verb + subject), the common forms (triggered by adverbs, prepositional phrases, past/present participles and adjectives) and the pragmatic functions (structural requirement, long subject, emphasis, narrative transition).

We are aiming here for more than just recognition of rules. When students find, group, and classify the sentences themselves, we engage them with inversion more deeply than if we simply provide a set of rules. They face a range of authentic cases in which they must decide what is essential and what is incidental; this builds real understanding rather than mere familiarity.

Stage 3: Arrangement—controlled practice (15 minutes)

During this stage, students respond individually in writing to a sentence-rewriting task. Students get a small paragraph to work with. Then they are asked to find sentences that can be rewritten using inversion. The passage has many instances of inversion: adverbial fronting, negative-initial, conditional, and subject-complement.

Once students finish writing, they give their paper to their partner for a peer check. We check the answers with the whole class as we discuss and make sure which sentences may be inverted and what changes are needed.

In this stage, students make use of the knowledge they have gained. They are not simply imitating the examples but actively judging each sentence: they check whether an inversion is possible and, if so, how to use it correctly. By including the peer-checking element, an additional level of cognitive

demand is added: they must justify their rationale to a partner, including why they inverted a sentence in a certain way, or why a particular case was decided as wrong.

Stage 4: Action—communicative application (18 minutes)

At this stage, we play a quick-response game, dividing the class into two large teams. One team gives the other team a word or phrase, and the other team has to give an inverted sentence starting with that word or phrase within a few seconds. 1 point is assigned for each correct statement. We serve as judges and timekeepers and write down the interesting examples on the board for reference.

The element of competition keeps the energy levels high and encourages students to retrieve the structure under pressure. Forcing them to produce the structure in new and surprising contexts prevents them from using the same few patterns.

After the game, students are given a writing assignment: we ask them to write a short report on a sports event using as many inverted sentences as possible. This is conducted separately and finished after lectures. Students must remember that inversion is not simply a question type on tests. It occurs in real writing and speech, and knowing how to use it gives them flexibility in English.

The oral game allows students to go from controlled practice to spontaneous production. They have no time to plan an answer; they must answer instantly. This type of practice shifts knowledge from conscious recall to automatic usage. The writing task takes it further because students have to use inversion in a more sustained piece of work rather than in single sentences. This means they have to think about language while they plan, monitor, and adjust their use of language.

Stage 5: Assessment—reflective evaluation (10 minutes)

In the final phase, we ask pupils to reflect on the lesson and take notes on two things: one they feel confident about and one they find vague. Some volunteers will share theirs with the class, and we analyze common difficulties. The last thing we do is summarize the lesson. The reflection activity allows students to consider what they've actually learned and not just what was delivered.

We have used this lesson design with a small group of students in the past and got good feedback. Most participants reported that the mind-mapping task in the Abstraction phase helped them clarify their understanding of the structure of inversion. Similarly, several participants regarded the oral game in the Action phase as a useful and fun exercise for practicing inversion on the spot. Students' informal responses indicate that they appreciated the 5A model's emphasis on discovery and real-life situations. In future implementations, we intend to gather more systematic data to assess the model's effectiveness.

4. Conclusion: Pedagogical Implications and Limitations

This investigation contributes to the literature on English teaching. Theoretically, we developed a 5A teaching model that applies deep learning principles to grammar instruction. The five features of deep learning are association and structure, essence and variation, activity and experience, transfer and application, and value and evaluation. The teaching model puts these features into a step-by-step

teaching sequence. In practice, we offer a concrete lesson plan for teaching full inversion, showing how the model can be used in a real classroom with first-year English majors. It is hoped that the approach outlined in this paper can provide a means of transforming grammar instruction from memorization to thinking.

This paper's pedagogical design has several implications for grammar instruction and the cultivation of thinking in English. First, grammar instruction should go beyond rule presentation and mechanical drills to engage learners in inductive discovery, communicative application, and reflective evaluation. The 5A model proves useful for this purpose. Second, mastering thinking in English refers to habitual practice. The circular pattern of the 5A model signifies that thinking is a habit that can be developed through reinforcement. The third stage must focus on designing tasks through a systematic progression from perception to cognition to decision-making to action to evaluation.

Nonetheless, this research has some limitations. Primarily, this is a design study, not an experimental study. We have not provided quantitative evidence to support the proposition that the model works. Subsequent experiments can employ quasi-experimental or action research methods to test its impact. Our design assumes students possess sufficient ability to engage in inductive reasoning and metalinguistic discussion. Weaker learners will need extra support. Ultimately, this is only one lesson. To form lasting thinking habits in English, there is a need for a model that is applied across a series of lessons.

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[Author Profile]

1. Jingjing Tian, Associate Professor at the School of Foreign Languages, Guangzhou College of Commerce, Guangzhou, China. Her research interests include curriculum and instruction theory, English language teaching, and deep learning in language education.
2. Chuna Yuan, Lecturer at the School of Foreign Languages, Guangzhou College of Commerce, Guangzhou, China. Her research interests include English language teaching.