

# *Research on the Effective Ways to Improve Students' Argument Construction Ability*

Lei Ma

*Sichuan Normal University, Chengdu, Sichuan, 610000, China  
437044695@qq.com*

**Keywords:** Argument construction, high-order thinking, fallacies

**Abstract:** In university education, many learning activities such as discussion, seminar, debate and writing tasks require argument construction ability. However, problems existing in students' argument construction would decrease student's learning outcome and hinder the development of students' logical thinking. Therefore, critical thinking tools and evaluation basis need to be introduced to improve students' ability of analyzing, information processing, logical reasoning, evaluating and reflecting in argument construction, and to help them achieve better learning experience, increased knowledge retention, improved learning outcomes, and better developed critical thinking ability.

## 1. Introduction

Argument is usually defined as a statement or a set of statements used to convince people that your opinion about a certain issue is sound, or as a coherent series of reasons, statements, or facts intended to support or establish a point of view. Argument construction requires information processing ability, active learning ability, and critical thinking ability, therefore, students' argument construction ability can directly reflect their learning ability and thinking quality. In university education, a lot of opportunities, such as discussion, seminar, debate and writing tasks are created for students to analyze and construct arguments in order to improve their argument construction ability and to achieve more effective learning experience, which can further lead to increased knowledge retention, improved learning outcomes, and better developed critical thinking ability.

## 2. Status quo

In spite of the importance of argument construction ability and the learning activities carried out to promote the development of students' argument construction ability, many problems still exist in students' argument construction, which may decrease student's learning outcome or hinder the development of students' logical thinking.

### 2.1 Lack of higher-order thinking

In argument construction, many students are not quite aware that to construct argument is not simply to put information together, instead, it requires higher quality thinking ability. Benjamin

Bloom, the famous American educator and psychologist, proposed the Taxonomy of Educational Objectives to demonstrate the classified levels of thinking.

Table 1: Bloom's Taxonomy

<b>Taxonomy</b>	<b>Definition</b>	<b>Learning activities</b>
Remember	Recall facts and basic concepts	memorize, recite, list, define, state
Understand	Explain ideas or concepts	explain, classify, discuss, select
Apply	Use information in new situations	operate, demonstrate, solve, use
Analyze	Draw connections among ideas	relate, compare, question, test
Evaluate	Justify a stand or decision	judge, argue, defend, weigh
Create	Produce new or original work	design, construct, develop, author

Table 1 presents six different levels of thinking proposed in Bloom's Taxonomy. Compared with remember, which focuses more on checking whether students can recall the information they have learned, high-order thinking obviously has different focuses. For example, to analyze requires students to distinguish between different parts, to evaluate usually concentrates on justifying. Argument construction involves high-order thinking processes. In research stage, analyzing skills are needed to examine and select the relevant evidence and data, to do the comparison and contrast, to question and test. In the construction stage, both applying and evaluating skills play essential role in using evidence and datas to support or oppose a certain stance, recognizing the possible mistakes or fallacies committed in the argument, and evaluating the quality of the constructed arguments. The lack of these high-order thinking abilities would directly lead to problems in argument construction, such as irrelevant evidence, subjectivism, weak warrant, poor logic, and so on, which would definitely result in the lack of credibility in arguments.[3]When construct arguments, students usually tend to use evidence to support or oppose a certain view point without checking the quality of the data, meanwhile they may also fail to evaluate the logic between the evidence and the stance, causing mistakes or fallacies in argument construction.

Lack of critical thinking ability is another important cause of the inefficiency in argument construction. Scholars point out that critical thinking is a cognitive activity, associated with using the mind. Learning to think in critically analytical and evaluative ways means using mental processes such as attention, categorisation, selection and judgement. In critical thinking, instead of accepting the given information, students are encouraged to evaluate the quality of information, check the source of information, look for reasons why something is correct or incorrect, identify problems in a certain logic, and even further, provide reasonable ways to correct or improve. Critical thinking plays crucial role in people's personal development, academic study, career life, and daily life, influencing people in their information processing, analyzing, reasoning, communication, decision-making and development of thinking quality. Critical thinking covers broad range of cognitive activities, study shows that In Humanities, such as Education, Linguistics, History, analysis and evaluation are the most commonly emphasized critical thinking skills. However, students' critical thinking ability is not fully developed, in argument construction, their work is more likely to be descriptive instead of critical, that is, they tend to state what happened, how it happened, what something is like, or explain what a certain theory says, how something works, instead of indicating whether something is appropriate or suitable, evaluating the significance of a certain issue, judging the strengths and weaknesses, or drawing inference from pieces of information.

## 2.2 Logical fallacies

A fallacy is an error in logic or reasoning that leads to an unsound argument supported by illogical or misleading premises, it usually occurs when people draw a conclusion from weak or irrelevant evidences or make mistakes in reasoning. Fallacies are quite common in argument construction, they may come in the form of over generalizations, appeals to emotion or authority, assumptions of causality, and a variety of other statements based outside of logic.

Table 2: The fallacies frequently committed in argument construction

Components of argument	Fallacies
evidence	Subjectivism, Missing Evidence, Appeal to Majority, Appeal to emotion, Appeal to force, Appeal to authority, AD hominem, Hasty generalization, Begging the question, Red herring, Straw man
logic	False Alternative, Post Hoc, False analogy, False cause, Complex cause, Slippery slope
language	Equivocation, Amphibole, Accent

Table 2 presents the fallacies students most commonly commit in argument construction. Fallacies occur for different reasons. Firstly, unclear or ambiguous words or expressions may cause fallacies, for example, the fallacy named Equivocation occurs when a word switches its meaning in the middle of an argument; while Amphibole is caused by faulty grammar or inappropriate punctuation in a statement. More possibly, fallacies are caused by the insufficient or irrelevant evidence. For example, when construct an argument, students may commit fallacies such as Subjectivism, Appeal to Majority, Appeal to emotion, Appeal to authority and Appeal to force when they mistakenly replace the reasonable evidence with personal opinion, individual preference, negative emotions, opinions from inappropriate authority, or even threat. If students attack somebody instead of refuting an opinion in their argument, the fallacy named AD hominem occurs. If the conclusion is reached on the basis of insufficient evidence, the fallacy named Hasty generalization occurs. Begging the question is committed when paraphrase is mistakenly used as evidence. Red herring occurs when an argument distracts listeners or readers, and leads them toward an irrelevant issue. In the worst situation, if there is no evidence at all, the fallacy named Missing Evidence occurs. Fallacies which are most difficult to recognize are those caused by poor or incorrect logics. For instance, analogies are not accepted as good evidence, since they don't provide appropriate analysis, and may confuse illustration and proof, therefore, the use of analogies in argument construction is recognized as the fallacy called False Analogy. In other situations, if the time order is mistakenly recognized as the cause-effect relation, the fallacy named Post Hoc is committed. Another classic and common example is Slippery Slope, which is a logical fallacy that claims one event or action will lead to another, more extreme event or action. This could be by directly causing that follow-up event, setting a precedent for it, or simply creating an environment where that follow-up event can occur. [1]

## 2.3 Lack of effective evaluation basis

In teaching, students' unsatisfactory performance in argument construction are caused by multiple reasons. Firstly, it is a general tendency that students take the first person perspective to analyze, organize the logic and provide evidence, personal experience or personal feeling become a common and single choice, elements in social perspective, such as economy, education, science and technology, environment, and culture are not attached enough importance to, which usually leads to the narrowed down viewpoint and decreased credibility in the arguments. The second problem

widely existing in argument construction is that students are unable to take deeper look or explore profoundly into the logic. The argument is usually limited to phenomenon, advantages and disadvantages, with the other aspects or further logic being discussed. Thirdly, lack of relevance is another problem that decrease the validity and credibility of the argument. Due to the problems mentioned above, there is an urgent need that evaluation tools should be introduced in argument construction to help students get objective and overall feedback of the quality of their arguments, and find reliable methods to improve.

### 3. Ways to improve students' argument construction ability

#### 3.1 Develop critical thinking ability in argument construction

Critical thinking can be traced back to ancient Greece, “critical” originates from “kriticos” in Greek, which means to question, analyze, and understand. National Council for Excellence in Critical Thinking defines critical thinking as the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing and evaluating information gathered from, or generated by observation, experience, reflection, reasoning, or communication, as a guide to brief and action. Critical thinking covers wide range of thinking activities, in the field of Linguistics and Education, analysis and evaluation are most commonly emphasized critical thinking skills. In argument construction, students should be guided to analyze and evaluate related issues and materials systematically. First, the given issue or topic should be analyzed by comparing or contrasting the elements involved and the relevant contents, Judging the strengths and weaknesses, examining the cause and effect relation in order to set a clear stance. Second, in selecting the possible evidence, critical thinking tool can be introduced to guarantee that students can think both in wide range and in depth. Paul-Elder Model (PEM), which is proposed by two scholars Richard Paul and Linder Elder, is one of the critical thinking tools that can be used in the analysis of argument. In PEM, eight elements of thinking are proposed to make sure a full view about a certain issue can be got.

Table 3: Using PEM in argument analysis

<b>Elements of thinking</b>	<b>Argument analysis</b>
purpose	Why is the argument constructed? To make a plan to solve a certain problem? / To stop a plan from being carried out? / To weigh value?
points of view	Positive / negative
concepts	The key definitions, theories, philosophical ideas in the issue.
assumptions	Shared knowledge / alternate
questions	Important issues involved in the issue: necessity, importance plan, solvency...
information	Evidence, data, and supporting material
inferences	Connection between different pieces of information, conclusion to be drawn, reasoning
consequences	Benefits and harms, advantages and disadvantages

Table 3 presents the important aspects in argument analysis based on the elements of thinking in PEM. All the elements of thinking in PEM can be concretized as questions, tasks, keypoints in argument analysis. The first step is to make clear the purpose of constructing the argument, do you want to offer a method to solve certain problems or to make judgement about whether something is correct or incorrect, worthy or unworthy, meanwhile definitions and concepts involved in to issue

need to be clarified. Secondly, a clear stance should be set, either positive or negative, unclear viewpoint or sitting on fence is not suggested in argument construction. Next, the method of presenting evidence depends on the purpose of argument, if the purpose is to offer a solution, the necessity and importance of having the solution, a practical action plan, and the significance can be discussed; if the argument is to weigh value, evidences related to both personal perspective and social perspective need to be presented. Generally speaking, PEM provides students with a practical tool to analyze the issue from different perspectives, by following the eight elements, students can make an overall analysis of a certain issue in a logical and highly-structured way.

### **3.2 Avoid logical fallacies in argument construction**

In argument construction, fallacies usually occurs because of the poor logic and unsound reasoning, in order to avoid the unconvincing or unsound argument, students are suggested to follow Toulmin Model in their argument construction. Toulmin Model (TM in short) is proposed by the British philosopher and educator Stephen Toulmin, it mainly contains three elements: claim, data, and warrant. Claim is the statement about facts, values, or policies, data is the evidence used to support the claim, and warrant is the logical connection between claim and data. [2] A good claim is supposed to be clear, accurate and unambiguous, the words or expressions used in the claim should not contain any ambiguity or inconsistent meaning, or the whole argument or the chain of arguments is based on blurred viewpoint, which may result in the fallacies named Equivocation, Amphibole, and Accent. Second, the misuse of evidence, which generally includes lack of evidence, the use of irrelevant evidence, use of defective evidence, is the main cause of fallacies in argument construction. In the first situation, students propose a claim without offering any evidence or proof to support, in that case, the rule in argument construction called Burden of Proof, which holds that those who assert must prove, is violated. Good evidences should be the datas and information that are objective, accurate, relevent, sufficient, and from appropriate source of information. In most cases, fallacies are committed due to defective evidence, for example, subjective informative used as evidence, such as personal opinions and preference, leads to Subjectivism, repetition or paraprase of the claim leads to Begging the question and Tautology, insufficient evidence or nonrepresentative samples lead to Hasty generalization, evidence from inappropriate or untrustworthy source of information lead to Appeal to people, Appeal to emotion, Appeal to authority, and so on. Third, the clear warrant, which means the link or connection between claim and data, should be identified in an argument. Although sometimes writers do not specifically state the warrant in argument, warrant should be implied or suggested, making it possible for readers or listeners to make a clear link between claim and data. If the warrant is not clear or commonly unacceptable, fallacies including False cause, Denying equifinality, Complex cause, and Slippery slope, are committed. Therefore, in order to avoid fallacies in argument, students should be guided to examine the quality of the three elements, making sure that claim is stated in a clear, accurate and unambiguous way, data they use to support the claim is accurate, objective, sufficient, updated, relevant to the claim, and is from appropriate and trustworthy source of information, at the same time, a clear and acceptable warrant can be identified between the claim and data.

### **3.3 Use effective evaluation basis in argument construction**

In order to provide tools for students to evaluate their own arguments from different angles and further support their learning by helping them reflect and find ways to improve, the intellectual standards of thinking proposed in PEM which contain nine different criteria are introduced.

Table 4: Using Intellectual standards in arguments evaluation

<b>Intellectual standards</b>	<b>Explanation</b>
clarity	Is the argument understandable?
accuracy	Is the information true and accurate?
precision	Is the information concrete and sufficient?
relevance	Is the evidence highly relevant to the claim?
significance	Is it the most important issue to address?
depth	Is the issue explored in depth?
breadth	Is the issue analyzed from different perspectives?
logic	Is the argument sound? Any fallacy in it?
fairness	Is it objective and unbiased?

Table 4 shows the nine intellectual standards that can be used in the evaluation of argument construction to enable students to make an overall evaluation at multiple levels. For instance, by following the standards of clarity, accuracy, and precision, students could make sure whether the information used in the arguments is authentic, accurate, updated and appropriate, meanwhile, the source of information should also be checked to increase the credibility. The standards of breadth and depth require the argument to cover wide range and profound thinking. The analysis should cover angles ranging from personal issues, such as life, health, living quality, life value, and accomplishment, to social issues, which include economy, science, technology, environment, education, culture, future, and so on. The standard of logic concentrates on examining any violation of reasoning that may cause fallacies and lead to unsound arguments. The nine intellectual standards provide students with a reliable and feasible tool to evaluate the quality of their arguments, to reflect on the problems existing in their analysis, researching, information processing, and logical reasoning, and to improve the logic, credibility and quality of argument.

#### 4. Conclusion

To conclude, argument construction ability is quite essential in the development of students' writing skills, oral skills, and logical thinking skills in university education. Currently, the lack of high-order thinking and effective evaluation basis, as well as various fallacies committed, are the main causes of student's unsatisfactory performance in argument construction. Therefore, critical thinking tools and evaluation basis need to be introduced to improve students' ability of analyzing, information processing, logical reasoning, evaluating and reflecting in argument construction, which will definitely further promote students' better performance in argument construction.

#### References

- [1] Brooke Noel Moore. *Critical Thinking*. [M]. Beijing: China Machine Press, 2021.
- [2] Gary Rybold. *Debating in English: A Critical Thinking Approach to Effective Speaking* [M]. Beijing: Foreign Language Teaching and Research Press, 2013.
- [3] Zhou Jianwu. *Analysis of Effectiveness of Arguments* [M]. Beijing: Tsinghua University Press. 2016.