從高中英文課文中學習論證能力——
以龍騰版B5L4為例

Learning Argumentation
from the textbook made possible
for Senior High School EFL Learners

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Part **1**

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Expository vs Argumentative Essay

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Argumentation in our Curriculum Guidelines of 12-Year Basic Education

總綱：　A2 Logical Thinking and Problem Solving

U-A2 Possess the abilities for systematic thinking, in-depth analysis, and exploration, deepen metathinking, and actively face challenges to solve problems in daily life.

英語文領綱：

（三）語言能力（讀）

3-Ⅴ-11 能閱讀不同體裁、不同主題的文章。

（五）語言能力（聽說讀寫綜合應用能力，涵蓋兩種以上語文技能）

5-Ⅴ-13 能了解及欣賞不同體裁、不同主題之文章，並據以發表心得或感想。

Language skills

（九）邏輯思考、判斷與創造力

9-Ⅴ-1 能把多項訊息加以比較、歸類、排序。

9-Ⅴ-2 能根據上下文語境釐清兩個訊息間的關係。

9-Ⅴ-3 能依上下文分辨客觀事實與主觀意見。

9-Ⅴ-4 能分析、歸納多項訊息的共通點或結論。

9-Ⅴ-5 能將習得的原則類推到新情境中，解決問題。

9-Ⅴ-6 能綜合現有訊息，預測可能的發展。

9-Ⅴ-7 能評估不同資訊，提出合理的判斷或建議。

Higher-order thinking abilities

Argumentation in our G10~12 Textbooks

However, there is **NO** argumentative texts in our English textbooks!!

We have some pros-and-cons or for-or-against expository ones instead.

How can our students learn argumentation from expository texts in the textbooks?

Expository essay vs Argumentative essay

Expository essay	Argumentative essay
✎ Evidence-based approach	✌ Thesis-led approach
✎ Informative/ discussion	✌ Opinion
✎ No thesis statement in the introduction, mentioning both sides	✌ With a thesis statement showing the author's stance in the introduction
✎ provide information and explanations in a straightforward manner to the readers	✌ Try to convince the reader/ the other party that we alone have the truth and the other party should believe us and accept our point of view
✎ requires well-researched, accurate, detailed, and current information	
✎ **Develop arguments** for each side	✌ **Develop arguments** supporting the stance
✎ A dialogue between two parties to reach the truth	✌ Discuss conflicting opinions only to rebut
✎ Give the author's opinion in the conclusion/ or not	✌ A strong stance/ or a balanced view

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Part 2

Toulmin Model of Argument

Components of Toulmin Model of Argument

Stephen Toulmin, *"The Uses of Argument" (updated edition, 2003)*

primary
- **Claim**: the argument being made
- **Ground**: the evidence that supports the claim
- **Warrant**: the logic or assumptions that connect the evidence to the claim (inexplicit/ explicit)

secondary
- Backing: support for the warrant
- Rebuttal: counterarguments to the claim
- Qualifier: the limits to the claim

The pattern of an Argument

Stephen Toulmin, *"The Uses of Argument" (updated edition, 2003)*

Ground   →   So,   Qualifier   Claim

since

(Warrant)   unless

on account of   Rebuttal

Backing
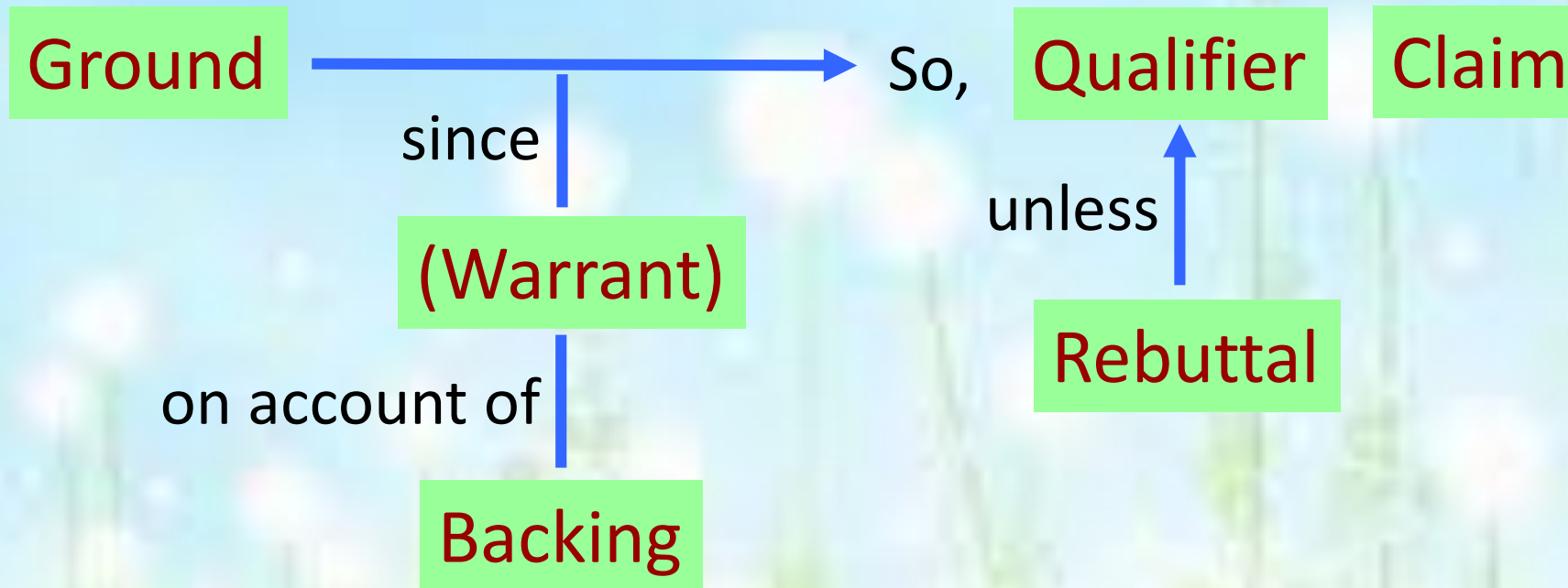
Toulmin Model in an Argumentative Essay

primary
- **Claim** → the thesis statement and/or the conclusion
- **Ground** → uncontroverted, verified, factual, hard-data
- **Warrant** → the logic or reasoning why the data supports the thesis statement

secondary
- Backing → further explanation, a secondary fact that validates the warrant's assumption
- Rebuttal → existing/potential objections & the author's refutations
- Qualifier → words like *almost, some, most, many, in general, usually, typically , sometimes, may,* etc.

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Types of evidence (Ground)

1. Facts

2. Statistics

3. Example/Experience

4. Expert testimony

5. (the author's own) Specialized knowledge

Types of Warrants

Richard Fulkerson, *"Teaching the Argument in Writing"* (1996)

Warrants based on—

1. Generalization: What is true of the sample is likely true of the whole.

2. Analogy: What is true of one situation is likely true of another, so long as they share key characteristics.

3. Sign: One thing indicates the presence or outcome of something else.

4. Causality: One thing causes another.

5. Authority: An indication that something is true because an authority or group of authorities affirms it.

6. Principle: An agreed-upon value or rule applied to a specific scenario.

Part 3

Analyzing the example text:
LT B5L4 "Lab-grown Meat:
To Eat or Not to Eat?"

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"Lab-grown Meat: To Eat or Not to Eat?" → **Pros-and-cons exposition**

What can teachers do with a pros-and-cons exposition?

In addition to teaching the organization of pros-and-cons exposition, there is another thing worth inquiring: **How effective each part of the arguments is?**

<para. 1>

Can you imagine taking a bite of a steak that was grown from a Petri dish instead of on a farm? It may sound like a scene in a sci-fi movie, but this is already a reality! Many start-ups have begun to develop a special new production process in which meat is created by taking animal stem cells and changing them into primitive fibers that combine to form muscle tissue. The final product is known as "lab-grown meat," and it's a thought-provoking recent trend that is backed by both Bill Gates and agricultural giant Cargill.

→ An introductory paragraph telling what lab-grown meat is and how it is made

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<para. 2> pros

The widespread support for producing meat in this way is due to the fact that [claim] it holds several substantial advantages compared to more traditional methods.

Firstly, [warrant 1] one could argue that traditional or old-fashioned meat production facilities, such as farms or factories, hardly ever have the animals' best interests at heart. [ground 1] Growing meat in a laboratory instead would help eliminate the need for slaughterhouses and the unethical treatment of these animals. In other words, you could rest assured that the so-called lab-grown beef patty on your plate didn't come from a cow that had to endure physical or mental torment....

<para. 2> pros

Ground 1

Warrant 1

What type of evidence is given?

✓ Facts – common knowledge that you don't have to kill animals to make lab-grown meat

Statistics

Example/Experience

Expert testimony

Specialized knowledge

What is the warrant based on?

Generalization

Analogy

Sign

Causality

Authority

✓ Principle – (1) People shouldn't produce meat by killing animals or treating them unethically, and (2) It is impossible for farms or factories to raise livestock in an ethical way.

...Better still, [ground 2] it could help make meat production more sustainable. [warrant 2] The raising of livestock needed to fulfill the current global demand for meat actually takes a heavy toll on the environment. [backing] According to FAO, it accounts for nearly 15 percent of greenhouse gas emissions. [also ground 2] Experts estimate that, by switching to lab-grown meat, emissions could be lowered by up to 96 percent....

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<para. 2> pros

Ground 2

Warrant 2

What type of evidence is given?

Facts

Statistics

Example/Experience

✓ Expert testimony– "Experts estimate that…"

Specialized knowledge

What is the warrant based on?

Generalization

Analogy

Sign

Causality

Authority

✓ Principle – (1) People shouldn't raise livestock in the way that takes a heavy toll on the environment, and (2) Greenhouse gas emission is one of the heavy tolls.

<para. 2> pros

…In addition, many claim it won't just be the environment that benefits. [ground 3] Scientists can actually make lab-grown meat healthier and more nutritious for humans by adding vitamins and minerals that are not always found in natural meat.…

<para. 2> pros

Ground 3

Warrant 3

What type of evidence is given?

✓ Facts – common knowledge that scientists can add vitamins and minerals…

Statistics

Example/Experience

Expert testimony

Specialized knowledge

What is the warrant based on?

Generalization

Analogy

Sign

Causality

Authority

✓ Principle – (1) Those vitamins and minerals added are important for humans, and (2) They also can't, or hardly can, be found in any other kind of food.

<para. 3> cons

Despite the evident advantages that this new type of forward-thinking food may hold, [claim] there are some concerns surrounding this meat of tomorrow....

...For a start, certain studies show that the impact of lab-grown meat could actually have far-reaching negative effects over the long term. While advocates for lab-grown meat say it can help fight climate change, [ground 1] some research suggests that maintaining the infrastructure of lab-grown cell cultures also requires significant quantities of energy and gas emissions....

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<para. 3> cons

Ground 1

Warrant 1

What type of evidence is given?

Facts

Statistics

Example/Experience

✓ Expert testimony – "Some research suggests that…"

Specialized knowledge

What is the warrant based on?

Generalization

Analogy

Sign

Causality

Authority

✓ Principle – (1) People shouldn't produce meat in the way that has far-reaching negative effects over the long term, and (2) Requiring significant quantities of energy and gas emissions is one of the far-reaching negative effects.

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<para. 3> cons

…Another issue to consider is whether this type of artificial meat is actually healthy and safe for humans to consume. Although great in theory, [ground 2] lab-grown meat is "unnatural," or "similar to genetically modified (GM) food." [warrant 2] Since the latter sometimes induces allergic reactions or even leads to more serious health problems like cancer, some people are warning against man-made meat for fear that it might have similar side effects.…

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Ground 2

Warrant 2

What type of evidence is given?

✓Facts – common knowledge that lab-grown meat is artificial, similar to genetically modified (GM) food

Statistics

Example/Experience

Expert testimony

Specialized knowledge

What is the warrant based on?

Generalization

✓Analogy --an inference from GM food to lab-grown meat

Sign

Causality

Authority

Principle

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<para. 3> cons

…One last area of concern is the actual taste of lab-grown meat. [ground 3] Without the naturally occurring connective fat, tissue and bones that are present in real meat, lab-grown meat is somewhat lacking in taste and texture and [warrant 3] might thus be unappealing to most consumers….

<para. 3> cons

Ground 3

Warrant 3

What type of evidence is given?

✓ Facts – given knowledge that the production method leads to the lack in taste and texture.

Statistics

Example/Experience

Expert testimony

Specialized knowledge

What is the warrant based on?

Generalization

Analogy

Sign

Causality

Authority

✓ Principle – The taste and texture are the appeal for most people who eat meat.

Part 4

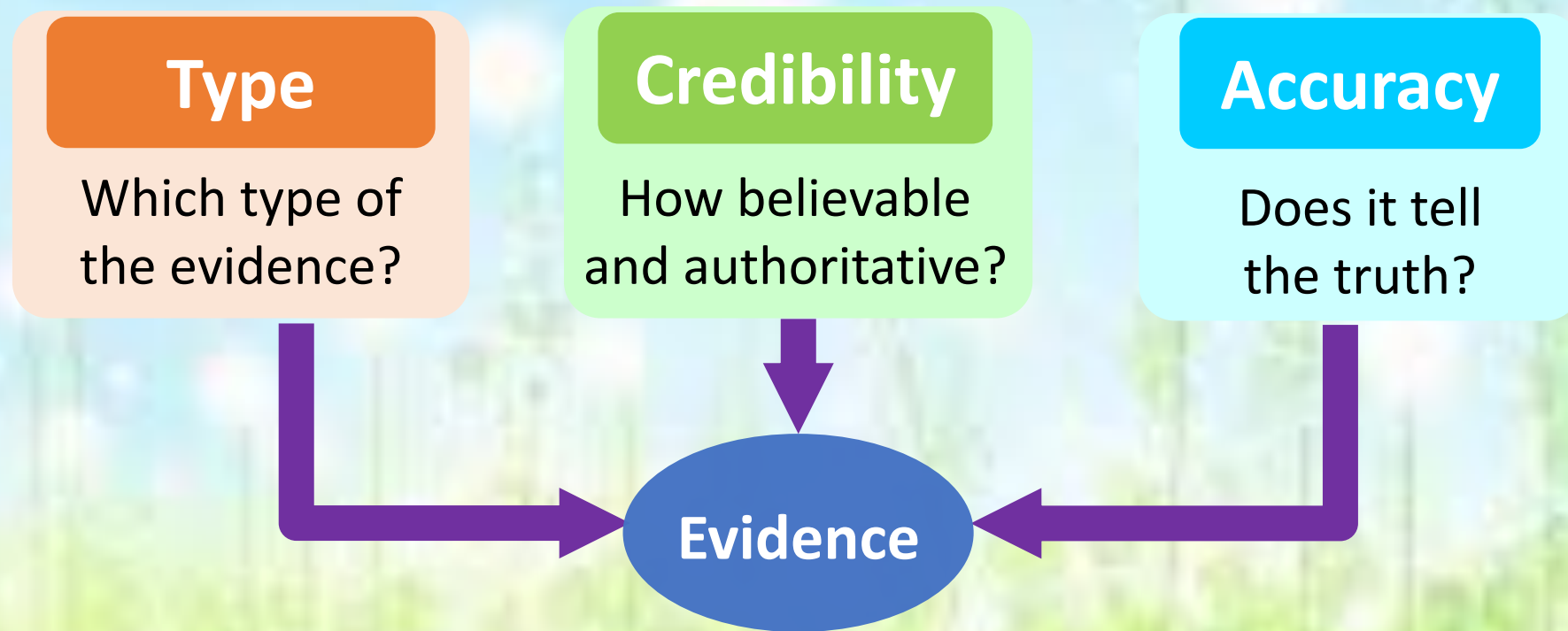## Questions to make students think & Suggestions to revision

Why do we evaluate the evidence?

Without the evidence, the claim will just be the author's personal opinion and doesn't seem convincing at all to the readers.

How do we evaluate the evidence?

Type
Which type of the evidence?

Credibility
How believable and authoritative?

Accuracy
Does it tell the truth?

Evidence

Why do we evaluate the warrants?

According to Toulmin, <u>the weakest part of any argument is its weakest warrant.</u>
If the warrant isn't valid, the argument collapses. If your audience does not accept your warrant, they are not likely to accept your argument.

How do we evaluate the warrants?

Is it correlation or causality? Is it falling into the post hoc fallacy? Are there multiple causes?

Are there sufficient, typical, accurate, relevant similarities? Are there counteranalogies that refute the original argument from analogy? Are there differences between the two situations that undermine the force of the similarity cited?

How strong is the relationship between the overt sign and the inferred claim? Have sufficient, typical, accurate, relevant instances of this relationship been observed? Have other potential influences been ruled out?

Warrants

Causality

Analogy

Generalization

Sign

Authority

Principle

What is the scope of the generalization (some, many, the majority, most, all, etc.) ? What are the nature, uniformity and stability of the group, category or population being generalized about?

Is it from an authoritative source on the issue in question? What political, ideological or economic interests does the authority have? Is this the sort of issue in which a significant number of authorities are likely to agree on?

Is the principle widely accepted? Does it accurately apply to the situation in question? Are there commonly agreed on exceptions? Are there 'rival' principles that lead to a different claim? Are the practical consequences of following th... sufficiently desirable?

Questions to make students think & Suggestions for revision

<para. 2> pros

Grounds

Warrants

Ground 2

Who are these experts? What are their specializations? Are they representative in that field? How can we check whether the number provided is accurate without any information on the experts?

→ The evidence would be more solid if more information on the experts were given, such as their names, countries, specializations, etc.

Ground 1

Are these broadly accepted or believed values?

→ Only some people hold these values. Thus, **this whole argument is weak and not convincing.**

Ground 3

Are these broadly accepted or believed values?
→ We can't tell because there is not enough information in the evidence provided.

→ Explicit the warrant by changing the sentence into "…by adding vitamins and minerals that are **important but not commonly** found in our food."

<para. 3> cons

Grounds

Warrants

Ground 1

Who conducted the research? When and where was the research carried out? What is the specific outcome of the research (eg. the "significant quantities") ?

→ The evidence would be more solid if more information on the research were given, as just mentioned.

Ground 3

Are these broadly accepted or believed values?

→ Only some people hold these values. Again, **this whole argument collapse.**

Ground 3

Does the production method necessarily lead to the lack of taste and texture?

→ The answer is definitely "No" if we do more research on it. Since the evidence is false, the statement falls into an opinion rather than a fact. **This argument is invalid.**
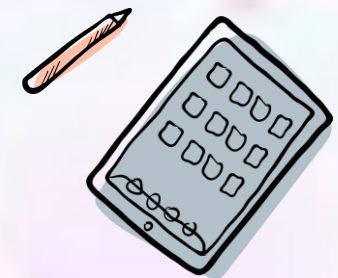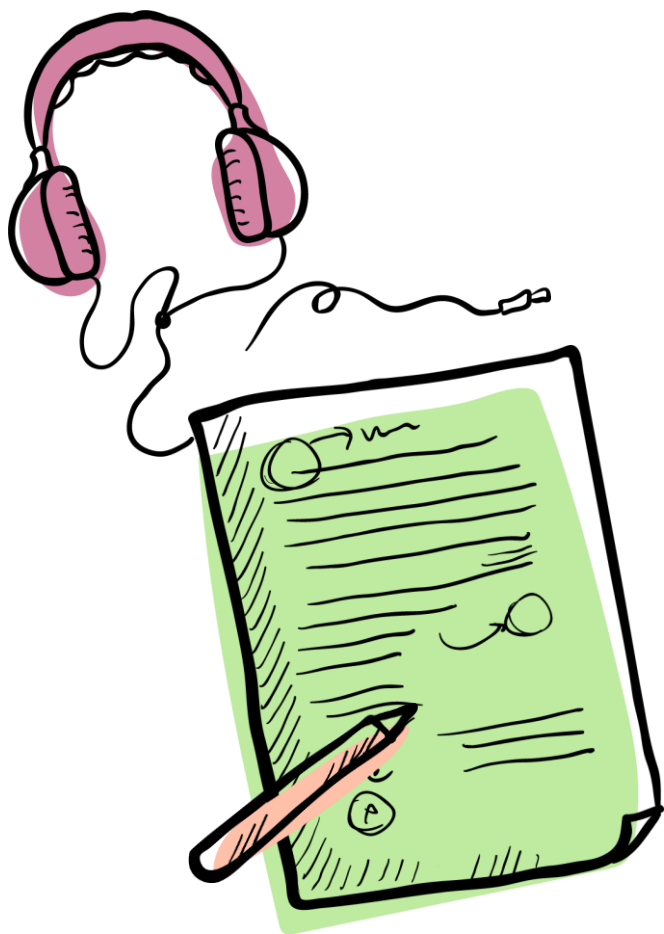
Due to the lack of proper material in the textbooks, students may not have chances to learn how to argue. By evaluating the evidence and warrants, we can discover whether the arguments are strong enough for the readers to accept the claims. Simultaneously, through the process, students develop their argumentation.