Communicative English Language Skills II

Lecture 8

Reading and Speaking: Science and the Future

Biniam Atnafe Beyene

biniwaatnafe@gmail.com

Welcome & Introduction

Hello, everyone — welcome to our eighth lecture of **Communicative English Language Skills II.**

Today's focus

- Topic: Reading & Speaking — Science and the Future
- Reading closely + speaking with confidence
- Three lenses: Innovation · Technology · Critical Thinking

Purpose of the Session

- Connects the threads built throughout the course
- Engage with a genuine scientific text
- Practise speaking — together, as a class
- Be active: not just listening, but reading and speaking

Why It Matters

Better understanding → more to say

- Each of you chose to invest in your future.
- Science works the same way: choices, observation, questioning, action.
- Reading deeply gives you something real to say.

Today's task

- Meet a scientist through his story.
- Read carefully, think critically, speak thoughtfully.
- Bring curiosity — questions matter more than answers.

Course Foundation

Skills I

- Listening & Reading — careful receivers of information
- Topics: study skills, health, cultural values, wildlife, population

Skills II

- Speaking & Writing — while strengthening reading
- Topics: life skills, future of science, environ ment, indigenous knowledge, heritage

Today honours both: careful reading + speaking about what we read.

Lesson Objectives

By the end of this lecture, students will be able to:

- Understand how scientific investigation works — through Dr. Aklilu Lemma's story.
- Develop reading, speaking, listening and writing in an integrated way.
- Apply key vocabulary: innovatio, technology, and critical thinking (future forms, predictions, planning).
- Practise critical thinking: evaluate claims, compare approaches, predict outcomes.

The Four Skills — Connected

READING

See — careful reception of ideas

LISTENING

Hear — colleagues, lectures, conferences

SPEAKING

Voice — articulate, defend, explain

WRITING

Record — reports, abstracts, arguments

Activity · Personal Goal-Setting

Write one sentence using:

“By the end of today's lecture, I will be able to ___”

- Keep it specific — not “I will learn English”.
- Write it in your notebook; we revisit it at the end.
- Time: 2 minutes — silent, individual writing.

Warm-up · Science in Your World

Science is not something that happens only in laboratories far away.

It is present in every community, in every daily decision, and in every observation we make about the world around us.

Today's reading: an Ethiopian scientist's groundbreaking discovery — made not in a foreign lab, but in a stream in northern Ethiopia.

A Question to Sit With

“Have you ever observed something in your environment that made you stop and ask: Why is this happening?”

That moment of curiosity — that is the beginning of science.

Dr. Aklilu Lemma had exactly such a moment, walking along a stream in northern Ethiopia. What he noticed there changed health research in the developing world.

Activity · Warm-up Group Discussion

Discuss in groups of 3–4. (8 minutes)

1. Have you ever observed something in nature you couldn't explain? What was it?

2. Do you know an Ethiopian scientist who made an important discovery?

3. Which value of science is most important — and why?
   (a) Developing technology (b) Solving societal issues
   (c) Solving everyday problems (d) Satisfying curiosity

Speculations About the Future of Science

speculations

= thoughtful guesses or predictions about things that have not yet happened

Science itself is deeply speculative — based on hypotheses (educated guesses) that must be tested.

Three interrelated ideas (we will return to these):

- New scientific knowledge → new applications.
- New technological advances → new scientific discoveries.
- Potential applications → motivate scientific investigation.

Three Statements — Keep Them in Mind

A

Knowledge → Applications

Discovery opens doors to practical uses.

B

Technology → Discoveries

Better tools let us see further (e.g. microscopes).

C

Need → Investigation

Practical problems drive research.

Disciplined Speculation

Scientists do not guess randomly.

They speculate based on **existing evidence, patterns, and knowledge.**

Today's passage: a scientist speculates that a plant observed to kill snails in a stream could become a controlled pesticide.

That speculation was disciplined, evidence-based, and transformative.

Activity · Choose Your Statement

Before we read:

- In your group, decide which of the three statements (A, B, C) you agree with most.
- Write the group's answer in ONE sentence.
- Begin with: “Our group agrees with statement ___ because ___.”
- After the reading, we revisit your answer to see if it changed.

Time: 4 minutes.

Pre-Reading · Activate Background Knowledge

Why pre-reading?

Before reading any academic text, **activate what you already know.** This helps your brain make a frame for the new information.

Question: What do you already know about Ethiopian scientists and their contributions?

Pre-Reading Is Not a Warm-Up

Research on reading comprehension shows that **activating background knowledge** significantly improves how much you understand and remember.

When your brain has a frame for the topic, new information fits into that frame more easily.

→ ***Take pre-reading seriously: it is an investment in your comprehension.***

Activity · Name an Ethiopian Scientist

"Do you know an Ethiopian scientist who made an important discovery? Who? What did they discover?"

- Discuss in groups for 3 minutes.
- Each group names at least ONE scientist.
- A spokesperson shares the name and contribution with the class.

Why Do Scientific Discoveries Matter?

Scientific discovery has been said to:

- **Develop technology**
- **Address societal issues**
- **Solve everyday problems**
- **Satisfy curiosity**
- **Build knowledge**

→ ***These values do not exist in isolation — they reinforce each other.***

There Is No Single “Right” Order

This is a **values question.** There is no single correct ranking — what matters is your **reasoning.**

Always add the word “because”

In academic English, an opinion is not enough — defend it with reasoning. This habit transforms a response into an argument.

Activity · Rank the Five Values

- In groups, put the five values in order of importance.
- Justify your top two choices — “because...”
- Spokesperson shares the ranking + reasoning.
- Other groups may challenge — respond with evidence.

Time: 6 minutes group · 4 minutes report-out.

Three Directions of Scientific Progress

A

New knowledge → applications.

Basic research leads to practical use.

B

New technology → new discoveries.

Better microscopes revealed the structure of DNA.

C

Potential applications → research.

Curing a disease motivates lab work.

Activity · Pick A, B, or C

- Individually, decide which statement (A / B / C) you accept.
- Write ONE sentence explaining your choice.
- Share with a partner: do you agree? Whose reasoning is stronger?
- We will return to this question after the reading.

Scientific Discovery Is a Process

Not a moment — a sequence of disciplined steps.

Today's passage = a real, documented 5-year project in Ethiopia.

Key Terms for Reading the Passage

pesticide	substance to destroy / control pests, including disease vectors
molluscicide	substance that kills molluscs (incl. snails)
parasite	organism that lives in/on another (the host) at the host's expense
pilot project	small-scale preliminary study to test feasibility
incidence	rate of NEW cases of a disease in a population over time

Don't Stop at Every Hard Word

Good academic readers use context clues — they make a reasonable guess, then keep reading.

Precision matters in science.
Example: “a dilution of 15–30 ppm” — that exact number tells us the concentration the solution must be to work.

Activity · Word-Formation Detective

Use word parts to guess each meaning. Write one-sentence guesses.

molluscicide

mollusc + -cide (killer)

eradicate

Latin radix (root) — pull out by the root

debilitating

Latin debilis (weak) — making weak

indigenous

Latin indigena — born from that land

Bilharzia — A Hidden Crisis

250 million

people affected across Asia, Africa, Latin America, and the Caribbean.

- Also known as schistosomiasis.
- Caused by flatworm parasites of genus Schistosoma.
- Transmitted through contaminated water—not a vector like mosquitoes.
- “Invariably a problem among poorer communities of the developing world.”

Debilitating vs. Fatal

FATAL

Kills people — quickly.

Statistics record the deaths.

Gets attention, gets funding.

DEBILITATING

Weakens — slowly.

Less productive, less capable, more vulnerable.

Statistics may not capture it.

Activity · Pair Discussion

"Why do diseases that affect poor communities often receive less scientific attention than diseases of wealthier communities?"

- Discuss in pairs for 4 minutes.
- Write ONE sentence summarising your pair's view.
- We connect this to critical thinking later in the lecture.

Vocabulary Pre-Teaching · Set 1

Word / Phrase	Meaning	Example from Context
afflict	to cause pain, suffering, or distress to	*"the parasitic disease that afflicts 250 million people"*
intermediate host	an organism in which a parasite lives during part of its life cycle	*"a life cycle dependent on an intermediate host — a water snail"*
cercariae	free-swimming larval form of the parasite that infects humans	*"the parasite begins to release numerous cercariae"*

Vocabulary Pre-Teaching · Set 2

Word	Meaning	Example
elucidate	to make something clear and understandable	*"to elucidate the structure and functions of the active ingredient"*
dilution	a weakened or more watery version of a substance	*"effective at dilutions of two to three ppm"*
molluscicide	a chemical substance that kills molluscs, particularly snails	*"endod had molluscicide as well as detergent properties"*
practicable	feasible; able to be carried out	*"may make bilharzia control practicable on a community scale"*
insidious	gradual, subtle — with harmful effects	*"a harder and more insidious enemy — the bilharzia parasite"*

Activity · Fill-in-the-Word

Choose from: elucidate · afflict · dilution · practicable

1. “The scientist hoped to ___ the mechanism by which the plant killed snails.”
2. “Bilharzia continues to ___ millions of people in sub-Saharan Africa.”
3. “The active ingredient was effective even at high ___.”
4. “The programme was simple enough to be ___ in rural communities without specialist staff.”

“Grassroots Attack on Bilharzia”

by Mike Muller — freelance journalist on Third World affairs

- About: Dr. Aklilu Lemma · Haile Selassie University, Addis Ababa
- Discovery: a plant-based molluscicide derived from the endod plant
- Setting: village of Adwa, northern Ethiopia
- Approach: “grassroots” — local, community-level — opposite of top-down expert solutions

Why Adwa Matters

1896

Battle of Adwa
Ethiopian forces defeated Italian colonisers.

today

New “battle” — against the bilharzia parasite, an insidious enemy.

Activity · Predict Before You Read

Based ONLY on the title "Grassroots Attack on Bilharzia", write TWO predictions using future-form language:

"The passage will probably discuss ___"

"I expect the author is going to argue that ___"

Keep predictions visible — we check them after reading.

Reading · Paragraph 1

“An African researcher has made encouraging progress in using a pesticide from an indigenous plant to combat bilharzia — the parasitic disease that afflicts 250 million people in the Third World. Over the past five years, an experiment has been going on in Ethiopia which has made encouraging progress in the fight against a disease that ravages three continents. The village of Adwa in northern Ethiopia is already remembered in African history as the place where the 19th century Italian colonisers were halted. Now, it is the setting for a new initiative against a harder and more insidious enemy — the bilharzia parasite.”

Paragraph 1 · What's Going On?

Main idea

An Ethiopian researcher uses an indigenous plant to combat bilharzia — a major parasitic disease — through a 5-year experiment in Adwa.

Linguistic features to notice

- Present perfect: “has made”, “has been going on” — past action linked to NOW.
- Comparison: “harder and more insidious enemy”.
- Contrast: past military battle ↔ new scientific battle.

Why Mention 250 Million?

Rhetorical scale.

By showing how large the problem is, the author makes the research feel important and urgent.

Notice the contrast:

Adwa = site of a military resistance against colonialism.
Now = site of a scientific resistance against a biological invasion.

Activity · After Paragraph 1

In your group, answer in 1–2 sentences each:

1. **What is the MAIN IDEA of the paragraph?**

2. **What do you think the next paragraphs will be about?**

Spokesperson shares the group prediction with the class. Time: 5 minutes.

Chunked Reading

Read a section → Stop and think → Continue.

This strategy improves comprehension significantly compared to reading without pausing.

1	2	3
READ	**STOP**	**PREDICT**
one section / one paragraph	write a one-line summary	what comes next?

Activity · One-Sentence Summary

Summarise paragraph 1 in EXACTLY one sentence.

Your sentence must answer:

- **WHO did**
- **WHAT**
- **WHERE**
- **WHY**

Compare with two classmates: whose is most informative? Whose is most concise?

Reading Is Thinking, Not Decoding

Good readers **engage, question, and predict.** They do not let words wash over them.

- Summarise → reinforces memory.
- Predict → makes the next section feel earned.
- Question → builds critical engagement.
- Connect → links the new to the known.

Activity · Speaking About the Future

In pairs, take turns speaking. Use ALL four future forms.

- What WILL change about your country in the next 20 years? (will)
- What ARE YOU GOING TO study next semester? (going to)
- What MIGHT scientists discover about endod next? (may / might)
- What ARE YOU DOING this weekend? (present continuous)

Time: 8 minutes. Listen to each other. Correct gently.

Revisit the Three Statements

Now that you have read paragraph 1 of Dr. Aklilu Lemma's story:

Which of A, B or C now best describes his work? Did your answer change?

- Discuss in pairs for 3 minutes.
- Be honest: did the reading change your view?
- Real scientific stories are rarely as simple as one statement suggests.

The Grassroots Principle

Innovation does NOT require expensive equipment.

It requires careful observation and persistent inquiry.

Dr. Aklilu Lemma listened to what his community was already doing — using a local plant as soap — and saw in that everyday practice the seed of a medical breakthrough.

What We Did Today

- Activated background knowledge about Ethiopian science.
- Pre-taught technical vocabulary (afflict, molluscicide, insidious...).
- Read paragraph 1 of “Grassroots Attack on Bilharzia”.
- Practised present perfect, future forms, and chunked reading.
- Discussed the three statements about science → revisit after reading.
- Reflected on the grassroots principle and disciplined speculation.

Check Your Goal

Open your notebook to your goal sentence from the start of the lecture.

> ***"By the end of today's lecture, I will be able to ___."***

Did you achieve it? Tick one:

- ☐ YES — fully
- ☐ PARTLY — needs more practice
- ☐ NOT YET — what stopped me?

Questions?

“In academic life, you are not expected to just state an opinion.

You are expected to explain and defend it with reasoning.”

So — what would you like to ask, and why?

Read carefully. Think critically. Speak thoughtfully.

Thank you.

For any question, please reach out to me:

biniwaatnafe@gmail.com

Office Hours: Mon, Wed, Fri mornings

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