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READING IN THE TECHNOLOGICAL CONTEXT

Asst. Prof. Dr. Pornpun Oranpattanachai

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เลขมาตรฐานสากลประจำหนังสืออิเล็กทรอนิกส์
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PREFACE

This textbook entitled *Reading in the Technological Context* is designed for undergraduate students in the technological/engineering field. It concentrates on eleven reading strategies which are useful for reading texts. These eleven reading strategies are the strategies of previewing, predicting, skimming, scanning, finding topics and main ideas, context clues, making an inference, facts or opinions, annotating, note taking, and word skipping which is an important reading strategy but has never been presented in the reading textbooks available in the market.

To motivate the engineering/technical students to do reading texts in this textbook and to serve their needs to be able to read English texts in their disciplines, *Reading in the Technological Context* gives students exposure to a wide range of authentic texts in a technological field only. The technological content can activate their background knowledge, which in turn facilitate their reading process when they face linguistic difficulties. In addition, since it seems there has been no reading textbooks focus on technology only, this textbook is hoped to fill the gap.

Reading in the Technological Context comprises 11 units, each of which consists of 5 major sections, i.e. definition and how to use of each reading strategy, before you read activity, while you read activity, after you read activity and language focus. Before You Read activity comprises 3 sections: discussion, vocabulary preview and before reading strategy practice. While You Read activity has 2 sections: while reading strategy practice and reading for details. After You Read activity has only one section, critical thinking skill activity, which is an essential skill for citizens in the 21st century. Lastly, Language Focus part providing explanation about the grammatical structures used in the reading text.

It is hoped that students who study or teachers who use *Reading in the Technological Context* will benefit from this reading textbook.

Contents

Acknowledgements

Preface

Unit 1: Artificial Intelligence 7

1.1 Reading Strategy: **Previewing** 8
1.2 Before You Read 9
1.3 While You Read 12
1.4 After You Read 14
1.5 Language Focus: **Finite and Non-Finite Verbs** 15
Summary 21
References 22

Unit 2: Driverless Cars 23

1.1 Reading Strategy: **Predicting** 24
1.2 Before You Read 25
1.3 While You Read 29
1.4 After You Read 32
1.5 Language Focus: **Sentence** 32
Summary 35
References 36

Unit 3: Solar Energy 37

1.1 Reading Strategy: **Skimming** 38
1.2 Before You Read 38
1.3 While You Read 42
1.4 After You Read 43
1.5 Language Focus: **Phrases and Clauses** 43
Summary 46
References 47

Unit 4: **A Pilotless Plane** **49**
1.1 Reading Strategy: **Scanning** 50
1.2 Before You Read 50
1.3 While You Read 57
1.4 After You Read 58
1.5 Language Focus: **If-Clause Types 1 and 2** 58
Summary 61
References 62

Unit 5: **5G Technology** **63**
1.1 Reading Strategy: **Word Skipping** 64
1.2 Before You Read 64
1.3 While You Read 67
1.4 After You Read 68
1.5 Language Focus: **That Clause as a Noun Clause** 69
Summary 70
References 71

Unit 6: **Electric Cars** **73**
1.1 Reading Strategy: **Finding Topics and Main Ideas** 74
1.2 Before You Read 77
1.3 While You Read 78
1.4 After You Read 82
1.5 Language Focus: **So…That** 82
Summary 83
References 84

Unit 7: **E-Waste Recycling** **85**
1.1 Reading Strategy: **Using Context Clues to Guess Meanings** 86
1.2 Before You Read 89
1.3 While You Read 90
1.4 After You Read 92
1.5 Language Focus: **Adjective Clauses** 93
Summary 95
References 96

Unit 8: **Thailand 5G** **97**
1.1 Reading Strategy: **Making an Inference** 98
1.2 Before You Read 99
1.3 While You Read 100
1.4 After You Read 104
1.5 Language Focus: **Participial Phrases** 104
Summary 105
References 106

Unit 9: **High-Tech Plans** **107**
1.1 Reading Strategy: **Fact or Opinion** 108
1.2 Before You Read 109
1.3 While You Read 110
1.4 After You Read 115
1.5 Language Focus: **Noun Phrases** 115
Summary 117
References 118

Unit 10 **The History of Energy** **119**
1.1 Reading Strategy: **Annotating** 120
1.2 Before You Read 121
1.3 While You Read 123
1.4 After You Read 125
1.5 Language Focus: **Adverb Clauses** 126
Summary 127
References 128

Unit 11: **Maintenance** **129**
1.1 Reading Strategy: **Note Taking** 130
1.2 Before You Read 130
1.3 While You Read 131
1.4 After You Read 136
1.5 Language Focus: **Present Passive Voice** 136
Summary 139
References 140

Answer Keys **141**
Subject Index **169**

UNIT 1

Artificial Intelligence (AI)

LEARNING OBJECTIVES	
Reading Strategy	***Previewing***
Language Focus	***Finite and Non-Finite Verbs***

Unit 1
Artificial Intelligence (AI)

In this unit, you will……

1) read about types of artificial intelligence.
2) learn how to apply *'previewing strategy'* before reading.
3) increase your understanding of target words.
4) learn about finite and non-finite verbs.

1.1 Reading Strategy: *Previewing*

Previewing strategy is a strategy that readers use to get an overview of the reading text before reading the main body. Previewing the text helps the readers get an idea of what the text is about. This will activate their prior relevant knowledge which can help enhance their understanding of the text. It also prepares the reader for what they are going to read so they can determine whether the text serves their purpose of reading. If it does not serve their purpose, the readers can make a decision to not read it. In addition, it can help readers to set a purpose of reading.

To use the *'previewing strategy'* start by reading:

- the title
- headings and subheadings
- highlighted parts
- illustrations such as diagrams, tables, and graphs
- bold typed or italicized words
- the first sentence in each paragraph
- the last sentence in each paragraph
- summary

(Lumen Developmental English, n.d.)

1.2 Before You Read

Using Your Background Knowledge

Discuss the following questions in pairs or groups.

1. Do you use AI in your daily life? How?
2. Do you think AI is more or less smart than you? Why?
3. What tasks would like AI to do for you?

Previewing

Read the article title, paragraph headings and bold typed words quickly and then answer these questions.

1. What is this article about?
2. Looking at the bold words, what will you learn from the article?
3. What criteria is used to classify the 3 types of AI?
4. What is the intelligence level of each type of AI?

The Three Types of Artificial Intelligence: Understanding AI

AI is rapidly evolving. Artificial Super Intelligence could be here sooner than expected.

What is AI?: The three types of Artificial Intelligence

"AI is the science and engineering of making intelligent machines, especially intelligent computer programs."– Alan Turing

The classification of AI is determined by the **level of intelligence embedded** into a robot. AI can be categorized into three distinct types:

Artificial Narrow Intelligence (ANI)

Artificial Narrow Intelligence (ANI), also known as Narrow AI or Weak AI, is a type of Artificial Intelligence **focused on one single narrow task**. It possesses a narrow-range of abilities. This is the only AI in existence today, for now.

Narrow AI is something most of us interact with on a daily basis. Google Assistant, Google Translate, Siri, Cortana, or Alexa are all examples of machine intelligence using Natural Language Processing (NLP). NLP is used in chatbots and other similar applications. By understanding speech and text in natural language they are programmed to interact with humans in a personalised, and natural way.

AI systems are also currently used in medicine to diagnose cancers and other illnesses with extreme accuracy by replicating human-like cognition and reasoning.

Artificial General Intelligence (AGI)

Artificial General Intelligence (AGI) is a type of AI that is **about as capable as a human**. AGI is still an emerging field.

The human brain is the model to creating General Intelligence. Due to the lack of comprehensive knowledge of the human brain and its functionality, it seems unlikely AGI will exist anytime soon.

History has shown many times that humans are prone to creating technologies that become dangerous to human existence. Why would trying to create algorithms to replicate brain function be any different? When this happens, humans will have to accept whatever consequences it brings.

Artificial Super Intelligence (ASI)

Artificial Super Intelligence (ASI) is a type of AI that is **more capable than a human**. To fit this classification the AI would need to surpass humans at absolutely everything. Many believe ASI is the way into the future.

ASI will be able to perform extraordinarily well in the arts, decision making, and emotional relationships. These abilities are what currently differentiate machines from humans. They are presently believed to be strictly human abilities.

Many could argue that humans have not yet mastered the art of emotional relationships, or good decision making. Does it mean that perhaps, a few centuries into the future, ASI will master areas where humans have previously failed?

(Fourtane, 2019)

Vocabulary Preview

Match the words with their definitions to help increase reading comprehension.

embed	**task**	**existence**	**diagnose**
prone	**consequence**	**surpass**	**replicate**

Word	Definition
	1. state of being
	2. make an exact copy of
	3. a piece of work to be done
	4. fix (an object) firmly and deeply in a surrounding mass.
	5. be greater than
	6. identify the nature of an illness by examination of the symptoms.
	7. likely to do something bad
	8. a result

(Cambridge Dictionary, n.d.)

1.3 While You Read

Read the following article and then do as directed.

The Three Types of Artificial Intelligence: Understanding AI

AI is rapidly evolving. Artificial Super Intelligence could be here sooner than expected.

What is AI?: The three types of Artificial Intelligence

"AI is the science and engineering of making intelligent machines,
especially intelligent computer programs." – Alan Turing

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Artificial Super Intelligence (ASI)

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Many could argue that humans have not yet mastered the art of emotional relationships, or good decision making. Does it mean that perhaps, a few centuries into the future, ASI will master areas where humans have previously failed?

(Fourtane, 2019)

Reading for Details

Answer the following questions briefly.

1. What is Google Translate?

   .....

2. What kinds of AI do you use in everyday life?

   .....

3. Which AI type is the most intelligent?

   .....

4. Which AI type uses natural language processing (NLP)?

   .....

5. Which type of AI is used in hospitals?

   .....

6. What does the word 'replicate' mean?

   .....

7. What type of AI is as intelligent as human beings?

   .....

8. Which types of AI do not currently exist?

   .....

9. Which type of AI exists now?

   .....

10. Which type of AI is more intelligent than human beings?

    .....

1.4 After You Read

Critical Thinking Skills

Work in pairs or groups to discuss the following questions.

1. Which type of artificial intelligence do you use now? Do you like it? Why?
2. Do you think Artificial General Intelligence (AGI) will harm human beings? Why?

3. Do you think it's possible for Artificial Super Intelligence (ASI) to complete decision making tasks better that human beings? Why?

1.5 Language Focus: *Finite and Non-Finite Verbs*

There are two types of verbs in English grammar.

1. Finite Verbs
2. Non-Finite Verbs

Finite Verbs are verbs which show tense, person and plurality.

Examples:

AI **is** the science and engineering of making intelligent machines and computer programs.

Narrow AI **is** something most of us interact with on a daily basis.

Both sites **use** machine learning methods to generate fake faces.

Non-finite verbs are verbs which do not show tense, person or number. They function as nouns, adjectives, or adverbs or combine with a finite verb (auxiliary verb) to form verb tense. There are three kinds of non-finite verbs in English.

1. Infinitive forms with or without 'to' (e.g. write, to write)
2. Gerund (e.g. writing)
3. Participles
   - Present Participles (e.g. writing)
   - Past Participles (e.g. written)

Infinitive verbs are categorised into two forms: full infinitive ('to' + infinitive) and infinitive (without 'to').

A full infinitive ('to' + infinitive) functions as the noun (subject or object), adjective or adverb in a sentence.

My dream is *to do* research about AI.

(used as a subject)