Reading Comprehension Strategies

Lesson 3: Skimming

Skimming involves reading quickly for the general understanding of a text, in other words, skimming is establishing the main idea of a text. In understanding the concept of a main idea, it is useful to distinguish between the following terms: topic, main idea, topic sentence and supporting details.

The topic of a text is the subject, or what the text is about. A topic can be expressed as a noun or a noun phrase. Some examples of topics include renewable energy, fossil fuels, solar energy, etc.

The main idea is expressed as a sentence. If someone asks you to identify the main idea of a passage and you respond with a single word, you have not said enough; you have probably just identified the topic. Some examples of main ideas include:

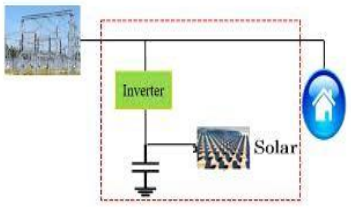
> *The study investigated the potential impacts of future climate and land-use change on vertebrate biodiversity across the planet.*
>
> *The impacts of an expansion in bioenergy cropland are already becoming apparent.*
>
> *We should be thinking about how to swiftly and significantly reduce energy consumption if biodiversity is to be protected.*

A topic sentence is the term used to identify the sentence in a paragraph that contains the main idea. Conventionally, the topic sentence is the first sentence in a paragraph, but not always. It can be at the beginning, the middle, or the end. Topic sentences are useful in determining the relationship between main ideas and supporting details.

New technology makes homes more energy independent, helps divert power during power outages

1. **Predicting (5)**

According to the cues provided, what is the text about?



a. Cheaper solar panels have encouraged more households to adopt solar power systems.

b. A smart device improves energy delivery between solar panels and the electrical grid.

c. The power electronics intelligence at the network edge is installed outside a home.

d. During the day homes consume energy from the solar power systems.

"Our innovation lets solar energy consumers be less dependent on the external power grid. The same technology also allows the utility company to control energy distribution, which is particularly useful during power outages caused by storms and other natural disasters," said Dr. Le Xie, professor in the Department of Electrical and Computer Engineering. "So, it's a win-win scenario for both the consumer and the utility company."

Over the last decade, a sharp drop in the cost of solar panels has encouraged more households to adopt solar power systems. In these homes, the current generated by rooftop solar panels is fed into an inverter before the electricity is ready for residential use and charging solar backup batteries. Another set of power electronics connects the solar panels and the batteries back to the grid. These connections ensure that homes are always connected to the grid as long as the grid is functional. During the day, homes consume more solar energy, and any excess energy is supplied to the grid. At night, homes draw electricity from the grid.

Unlike the conventional solar-powered systems that involve many electronics to connect back and forth from the grid, the researchers put together a single device, called the power electronics intelligence at the network edge, or PINE. This device, which is installed outside a home, has three main connections: one going to the home, one to the utility grid and another to the solar panels and batteries. PINE can control the flow of electricity in any one of these directions.

This device is like an intelligent energy router. It regulates the grid voltage, integrates solar energy, which is locally produced, and intelligently manages and routes the energy in all directions. The researchers designed this device to also be programmable, so that an authorized external user, like the utility company, can control the amount of grid electricity reaching solar-powered homes.

PINE systems can dynamically and in real time inject different voltage support to the utility grid. So, the utility companies need not spend millions in buying capacitor banks to support the voltage across the feeder lines. During power outages, PINE allows homes to be self-sufficient and use their solar power efficiently. The technology also allows the utility company to wirelessly instruct PINE systems to limit the grid current to solar-powered homes and redirect it to other affected areas.

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2. Skimming (30)

Choose from the list A-G the main idea for paragraphs 1-6. There is one extra letter that you do not need to use.

A. The smart technology benefits the consumer and the utility company alike.
B. PINE is a device that can control the flow of electricity in different directions.
C. A smart device improves energy delivery between solar panels and the electrical grid.
D. How solar-power systems connected to the grid work.
E. PINE is like an intelligent energy router.
F. PINE will make utility companies lose money
G. PINE systems allow utility companies to redirect energy to affected