READING PASSAGE 2

*You should spend about 20 minutes on **Questions 14–26**, which are based on Reading Passage 2 below.*

Changes in reading habits

What are the implications of the way we read today?

Look around on your next plane trip. The iPad is the new pacifier for babies and toddlers. Younger school-aged children read stories on smartphones; older kids don't read at all, but hunch over video games. Parents and other passengers read on tablets or skim a flotilla of email and news feeds. Unbeknown to most of us, an invisible, game-changing transformation links everyone in this picture: the neuronal circuit that underlies the brain's ability to read is subtly, rapidly changing and this has implications for everyone from the pre-reading toddler to the expert adult.

As work in neurosciences indicates, the acquisition of literacy necessitated a new circuit in our species' brain more than 6,000 years ago. That circuit evolved from a very simple mechanism for decoding basic information, like the number of goats in one's herd, to the present, highly elaborated reading brain. My research depicts how the present reading brain enables the development of some of our most important intellectual and affective processes: internalized knowledge, analogical reasoning, and inference; perspective-taking and empathy; critical analysis and the generation of insight. Research surfacing in many parts of the world now cautions that each of these essential 'deep reading' processes may be under threat as we move into digital-based modes of reading.

This is not a simple, binary issue of print versus digital reading and technological innovation. As MIT scholar Sherry Turkle has written, we do not err as a society when we innovate but when we ignore what we disrupt or diminish while innovating. In this hinge moment between print and digital cultures, society needs to confront what is diminishing in the expert reading circuit, what our children and older students are not developing, and what we can do about it.

We know from research that the reading circuit is not given to human beings through a genetic blueprint like vision or language; it needs an environment to develop. Further, it will adapt to that environment's requirements – from different writing systems to the characteristics of whatever medium is used. If the dominant medium advantages processes that are fast, multi-task oriented and well-suited for large volumes of information, like the current digital medium, so will the reading circuit. As UCLA psychologist Patricia Greenfield writes, the result is that less attention and time will be allocated to slower, time-demanding deep reading processes.

Increasing reports from educators and from researchers in psychology and the humanities bear this out. English literature scholar and teacher Mark Edmundson describes how many college students actively avoid the classic literature of the 19th and 20th centuries in favour of something simpler as they no longer have the patience to read longer, denser, more difficult texts. We should

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be less concerned with students' 'cognitive impatience', however, than by what may underlie it: the potential inability of large numbers of students to read with a level of critical analysis sufficient to comprehend the complexity of thought and argument found in more demanding texts.

Multiple studies show that digital screen use may be causing a variety of troubling downstream effects on reading comprehension in older high school and college students. In Stavanger, Norway, psychologist Anne Mangen and her colleagues studied how high school students comprehend the same material in different mediums. Mangen's group asked subjects questions about a short story whose plot had universal student appeal; half of the students read the story on a tablet, the other half in paperback. Results indicated that students who read on print were superior in their comprehension to screen-reading peers, particularly in their ability to sequence detail and reconstruct the plot in chronological order.

Ziming Liu from San Jose State University has conducted a series of studies which indicate that the 'new norm' in reading is skimming, involving word-spotting and browsing through the text. Many readers now use a pattern when reading in which they sample the first line and then word-spot through the rest of the text. When the reading brain skims like this, it reduces time allocated to deep reading processes. In other words, we don't have time to grasp complexity, to understand another's feelings, to perceive beauty, and to create thoughts of the reader's own.

The possibility that critical analysis, empathy and other deep reading processes could become the unintended 'collateral damage' of our digital culture is not a straightforward binary issue about print versus digital reading. It is about how we all have begun to read on various mediums and how that changes not only what we read, but also the purposes for which we read. Nor is it only about the young. The subtle atrophy of critical analysis and empathy affects us all equally. It affects our ability to navigate a constant bombardment of information. It incentivizes a retreat to the most familiar stores of unchecked information, which require and receive no analysis, leaving us susceptible to false information and irrational ideas.

There's an old rule in neuroscience that does not alter with age: use it or lose it. It is a very hopeful principle when applied to critical thought in the reading brain because it implies choice. The story of the changing reading brain is hardly finished. We possess both the science and the technology to identify and redress the changes in how we read before they become entrenched. If we work to understand exactly what we will lose, alongside the extraordinary new capacities that the digital world has brought us, there is as much reason for excitement as caution.

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Questions 14–17

*Choose the correct letter, **A**, **B**, **C** or **D**.*

Write the correct letter in boxes 14–17 on your answer sheet.

14 What is the writer's main point in the first paragraph?

A Our use of technology is having a hidden effect on us.
B Technology can be used to help youngsters to read.
C Travellers should be encouraged to use technology on planes.
D Playing games is a more popular use of technology than reading.

15 What main point does Sherry Turkle make about innovation?

A Technological innovation has led to a reduction in print reading.
B We should pay attention to what might be lost when innovation occurs.
C We should encourage more young people to become involved in innovation.
D There is a difference between developing products and developing ideas.

16 What point is the writer making in the fourth paragraph?

A Humans have an inborn ability to read and write.
B Reading can be done using many different mediums.
C Writing systems make unexpected demands on the brain.
D Some brain circuits adjust to whatever is required of them.

17 According to Mark Edmundson, the attitude of college students

A has changed the way he teaches.
B has influenced what they select to read.
C does not worry him as much as it does others.
D does not match the views of the general public.

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Questions 18–22

*Complete the summary using the list of words, **A–H**, below.*

*Write the correct letter, **A–H**, in boxes 18–22 on your answer sheet.*

Studies on digital screen use

There have been many studies on digital screen use, showing some **18** ..... trends. Psychologist Anne Mangen gave high-school students a short story to read, half using digital and half using print mediums. Her team then used a question-and-answer technique to find out how **19** ..... each group's understanding of the plot was. The findings showed a clear pattern in the responses, with those who read screens finding the order of information **20** ..... to recall.

Studies by Ziming Liu show that students are tending to read **21** ..... words and phrases in a text to save time. This approach, she says, gives the reader a superficial understanding of the **22** ..... content of material, leaving no time for thought.

A	fast	**B**	isolated	**C**	emotional	**D**	worrying
E	many	**F**	hard	**G**	combined	**H**	thorough

Questions 23–26

Do the following statements agree with the views of the writer in Reading Passage 2?

In boxes 23–26 on your answer sheet, write

YES	*if the statement agrees with the views of the writer*
NO	*if the statement contradicts the views of the writer*
NOT GIVEN	*if it is impossible to say what the writer thinks about this*

23 The medium we use to read can affect our choice of reading content.

24 Some age groups are more likely to lose their complex reading skills than others.

25 False information has become more widespread in today's digital era.

26 We still have opportunities to rectify the problems that technology is presenting.

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