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Name: ..... **QUIZ** **Points:** _____

Reading Explorer 3: Unit 9 Lesson A

The Power of Virtual Reality

[A] *People have talked about the possibilities of virtual reality since the mid-1990s. In this interview, Jeremy Bailenson - director of the Virtual Human Interactive Lab at Stanford University - explains how these possibilities are now becoming real.*

Interviewer: What's the difference between watching a video and wearing a VR headset?

[B] **JB:** The difference is what psychologists call "embodied cognition." That is, we learn by doing. For a lot of the most important learning events in your life, you actually did something - you walked somewhere or felt something. Similarly, Virtual Reality is active, not passive. You learn in ways that people have been learning for hundreds of thousands of years: by having an experience.

[C] Our lab studies have shown that, in general, the brain tends to treat a VR event in a similar way to an actual event. So there's a difference between performing an event in a traditional video game and doing it inside VR.

Interviewer: You've said that VR can help athletes. What's an example of that?

[D] **JB:** We demonstrated in the 2014 NFL season that VR could help quarterbacks by improving their decision-making accuracy and reducing their reaction times. Carson Palmer is one of the earliest adopters. VR gave him a tool he could use to learn the plays better. Carson had a system in his home. For just a couple minutes a day, after he'd wake up, he'd go over his plays and mentally practice what he was going to do. It was as though he were actually on the field. But he was in his living room, getting extra practice.

[E] Since then, VR has been used by teams across many sports. The German national soccer team, among others, uses it in their practice quite often.

Interviewer: Explain how VR avatars can improve video conferencing.

[F] **JB:** Video conferencing is good for some activities. But it's not good for an important meeting where intense decisions have to be made. One reason is the eye contact problem. If you look at the camera on the top of your laptop, you don't see the other person. Conversely, if you look at the other person's image on your screen, you're not looking at the camera.

[G] Psychologists have shown that *very* small changes in things like eye contact, body space, or posture alter the way conversations flow. With VR avatars, you can control things like body position and eye contact in a way you can't do with video conference.

Interviewer: You have said that VR can help save the planet. How can VR raise awareness of environmental issues?

[H] **JB:** One example is an experiment on the island of Ischia, in Italy. Ischia is a marine site that scientists have been studying for decades. Carbon dioxide is destroying its coral and degrading the food web. I can't bring the entire world to Ischia to show how CO_2 degrades ecosystems. But with VR, I can bring Ischia to *people*.

[I] So, we produced a seven-minute journey that shows how all the oceans will look in about 50 years, based on this one site in Ischia. Using this VR model, people get to be scientists. They explore the effects of CO_2 on various species in the ecosystem, and learn by *doing*.

Interviewer: What about the downsides of VR - for example, using it to create violent video games?

[J] **JB:** The way I think of VR is that we should use it for things that we can't do in the real world. You should use VR to go to the moon or try becoming someone else. But you *shouldn't* do things that you *wouldn't* do in the real world.

Interviewer: In your opinion, will VR change how we interact with other people in the real world?

[K] **JB:** VR is a tool, just like any other media. But it has a different impact on how we perceive information. That's because you're using your body and it's completely immersive. It's a big jump in the history of media. But I don't think it's going to change who people are. I think we will continue to be the same humans that we have been on the planet for quite some time. And I, for one, am glad of that.

The interview was edited for length and clarity.

____ 1. In paragraph B, what does *embodied cognition* mean?
   a. to feel something
   b. to walk somewhere
   c. to study the history of thousands of years
   d. to learn by doing

____ 2. What is the purpose of paragraph D?
   a. to give information about the NFL
   b. to provide an example of how VR can be used
   c. to quote an expert on VR
   d. to entertain the reader with a story

____ 3. In paragraph D, what does *Carson Palmer is one of the earliest adopters* mean?
   a. He adopted children.
   b. He was adopted.
   c. He used the VR system.
   d. The NFL used the VR system in 2014.

____ 4. Which is one way that avatars do NOT improve video conferencing?
   a. One way is that you can show body position.
   b. One way is that you can make eye contact.
   c. One way is that you can control body movements.
   d. One way is that you are looking at a screen instead of a person.

____ 5. According to Bailenson, which of the following is something we should NOT use VR for?
   a. to be someone else
   b. to play violent games
   c. to practice sports
   d. to have the experience of going to space

DIRECTIONS: Choose the best answer for each question.

Virtual Reality as a Life-and-Death Matter

[A] For many, virtual reality devices are nothing more than expensive toys. As with all new toys, once the novelty is gone, the devices will sit on a shelf and collect dust. After all, how many times can one ride a virtual roller coaster or experience some other virtual thrill before one feels bored?

[B] Although this may be true, there is a problem with this perspective. It wrongly assumes that virtual reality is only for entertainment purposes. Of course, there are good reasons why many people have this assumption. For certain, for the last several decades, virtual reality has been presented to the public in the form of interactive video games and travel experiences from the comfort of your own home. What fewer people have realized is the fact that virtual reality has rapidly become an essential part of many occupations. This includes the medical training of surgeons, who arguably have one of the most serious jobs in modern society.

[C] Indeed, for doctors aiming to specialize in surgery, virtual reality is not for fun and games. Rather, it is an essential part of the education that can help them save lives.

[D] There are several ways that virtual reality helps future surgeons prepare for life in the operating room. First of all, it allows them to understand the details of the human body in an efficient way. In the past, students studied human anatomy[1] by memorizing two-dimensional images in textbooks. One downside of this approach was the fact that different parts of the body were studied individually. This made it difficult for students to visualize how each part was connected to another. With the latest virtual reality technology, however, medical students are now able to "enter" the human body and "look inside." Studies have demonstrated that, as a result of this technological development, students are gaining anatomical knowledge in almost half of the time that it used to take.

[E] Another key benefit of the virtual reality training programs is that new surgeons are able to get lifelike practice before performing on live human bodies. This has been made possible by ultra-realistic simulation programs that give surgeons an accurate taste of the real thing. Along with providing doctors the opportunity to improve their technical ability with surgical tools, it also teaches them to calm their bodies and minds - an important skill that all surgeons must develop. With such virtual reality training programs becoming more widespread in medical schools and hospitals, it is thus likely that rookie[2] mistakes during surgical procedures will be reduced.

[F] According to many experts, the rise of virtual reality medical training has come at exactly the right time. Large countries with growing populations such as China and India will need a total of six million new doctors over the next 10 years. Likewise, as a result of its aging population, the United States will require 20,000 new surgeons over the same time period. The rapid learning experience that virtual reality provides will thus help to ensure that reliable surgeons are available in time to those who need them. Therefore, virtual reality is more like a matter of life and death than just an expensive toy.

1 **Anatomy** is the structure of a human or animal body.
2 A **rookie** is someone who has little experience because they are new at a job.

____ 6. What is this passage mainly about?
a. the ways in which virtual reality can influence the way people travel
b. the ways in which virtual reality has changed the toy industry
c. the ways in which virtual reality can help new surgeons
d. the ways in which virtual reality will change gaming

____ 7. According to the writer, why do many people see virtual reality only as a form of entertainment?
   a. Because it has often been associated with video games.
   b. Because most people do not use it at work.
   c. Because it is not yet used in all medical schools and hospitals.
   d. Because it is only used in the comfort of your own home.

____ 8. In the last sentence of paragraph D, what does the word *it* refer to?
   a. technological development
   b. virtual reality
   c. gaining anatomical knowledge
   d. studies

____ 9. What is a synonym for the word *taste* in paragraph E?
   a. test
   b. experience
   c. lesson
   d. advantage

____ 10. Why does the writer suggest that virtual reality is a matter of life and death in the passage?
   a. Because the aging population in the U.S. means there will not be enough surgeons.
   b. Because the demand for new surgeons will be high, and virtual reality can help train them efficiently.
   c. Because people around the world are becoming less healthy, and virtual reality can fix that problem.
   d. Because virtual reality programs are more reliable than human surgeons.

DIRECTIONS: Read the passage. Complete the sentences using the words in the box.

There are several ways that virtual reality helps future surgeons prepare for life in the operating room. First of all, it allows them to understand the details of the human body in an efficient way. In the past, students studied human anatomy[1] by memorizing two-dimensional images in textbooks. One downside of this approach was the fact that different parts of the body were studied individually. This made it difficult for students to visualize how each part was connected to another. With the latest virtual reality technology, however, medical students are now able to "enter" the human body and "look inside." Studies have demonstrated that, as a result of this technological development, students are gaining anatomical knowledge in almost half of the time that it used to take.

Another key benefit of the virtual reality training programs is that new surgeons are able to get lifelike practice before performing on live human bodies. This has been made possible by ultra-realistic simulation programs that give surgeons an accurate taste of the real thing. Along with providing doctors the opportunity to improve their technical ability with surgical tools, it also teaches them to calm their bodies and minds - an important skill that all surgeons must develop. With such virtual reality training programs becoming more widespread in medical schools and hospitals, it is thus likely that rookie[2] mistakes during surgical procedures will be reduced.

1 **Anatomy** is the structure of a human or animal body.
2 A **rookie** is someone who has little experience because they are new at a job.

connected	details	mistakes	simulation	two-dimensional

11. Virtual reality can help professions that still rely on _____ images in textbooks and training materials.

12. Virtual reality can be used in highly realistic _____ programs to train people in undertaking difficult and dangerous tasks.

13. For jobs that require workers to understand the connections between different parts, virtual reality could help them see how these parts are _____.

14. Virtual reality could also help to reduce _____ made by people doing difficult and dangerous tasks.

15. Virtual reality could be useful for other doctors because it would allow them to study _____ of anatomy efficiently.

DIRECTIONS: Complete the sentences. Choose the correct word.

a. actual
b. altered
c. conference
d. conversely
e. demonstrated
f. downside
g. gets to
h. go over
i. passive
j. treat

____ 16. Before giving a speech, I like to _____ my notes one last time.

____ 17. The teacher _____ the experiment before the students tried it out.

____ 18. I _____ the plans for the project after getting advice and feedback from our supervisor about how to make it better.

____ 19. My father always told me to _____ every person with kindness and patience.

____ 20. I thought we should take the train to avoid traffic; _____, my friend thought going by car would be quicker.

____ 21. The annual _____ gives experts a chance to discuss new theories and projects in the field.

____ 22. Virtual reality is not a(n) _____ activity, because you actually get to experience doing something.

____ 23. Using virtual reality allows one to have a similar experience to having a(n) _____ experience.

____ 24. One _____ of playing too many video games is that it can negatively affect your eyesight.

____ 25. A person _____ be a doctor only after many years of study and hard work.

Thanks!