Unit 2 Design

Part 1 Overview of the unit

Teaching objectives

Upon completion of this unit, the T is expected to enable Ss to:

OBJECTIVES	
• understand the principles of good design • understand the application of AR and VR • recognize the differences between the Ming-style furniture and baroque furniture	**Knowledge**
Listening skill • infer from context • listen for key terms **Critical thinking skill** • develop and apply evaluation standards **Speaking skill** • identify problems • provide solutions	**Skills**
• present a new product that solves a problem	**Unit task**

A suggested teaching plan

Periods 1 & 2	**Before class**	Check Ss' online study (**Warming up**, **Academic listening**)	
	In class	Introduce the topic; deal with the video in **Warming up** based on Ss' online performance	**20 mins**
		Go through **Academic listening 1** based on Ss' online performance	**30 mins**
		Go through **Academic listening 2** based on Ss' online performance	**30 mins**
		Deal with **Getting the skill** in **Critical thinking**	**20 mins**
	After class	Ask Ss to do the oral practice of **Academic listening**	
		Ask Ss to preview **A cross-cultural view** and **Academic communication**	
Periods 3 & 4	**Before class**	Check Ss' online study (**A cross-cultural view**, **Academic communication**)	
	In class	Deal with **A cross-cultural view**	**30 mins**
		Introduce the objectives of **Academic communication**; analyse the speaking model	**15 mins**
		Go through the speaking skill based on Ss' online performance	**5 mins**
		Raise a thorough discussion and help Ss finish the mini-project in **Skill enhancement**	**20 mins**
		Guide Ss to finish the speaking task step by step	**30 mins**
	After class	Ask Ss to upload the recordings of their presentations and complete **Unit review**	

Part 2 A detailed teaching guide

Warming up

Video script

Dieter Rams' 10 Principles of good design

Design is everywhere. The alarm clock that wakes you up every morning, the toothbrush you brush your teeth with, the bike you ride to school, or the high-speed train you take when travelling … Have you ever observed designs in your life and wondered, what designs are good designs? And what designs are ineffective?

You may come up with different ideas. There is a famous guideline called *10 principles for good design*. These principles were developed by Dieter Rams, a German industrial designer. He was the guiding force of Braun, a

famous consumer products company. Now let's look at these principles.

1. Good design is innovative. Innovative design always develops in line with innovative technology.
2. Good design makes a product useful. A well-designed product should fulfill its functions.
3. Good design is aesthetic. Most products are used frequently and their aesthetic quality influences the emotional well-being of the user.
4. Good design makes a product understandable. Ideally, it should be self-explanatory.
5. Good design is unobtrusive. Products are usually used as tools, not works of art. Their designs should therefore be both neutral and restrained, to leave room for the user's self-expression.
6. Good design is honest. It does not attempt to manipulate the consumer with promises that cannot be kept.
7. Good design is long-lasting. It is supposed to last for many years and make a product durable.
8. Good design is thorough down to the last detail. Nothing can be arbitrary or left to chance. Care and accuracy in the design process show respect toward the consumer.
9. Good design is environmentally friendly. It conserves resources and minimizes pollution throughout the lifecycle of the product.
10. Good design is as simple as possible. Less, but better, because it concentrates on the essential aspects.

Words and expressions

aesthetic *adj.* 美学的
unobtrusive *adj.* 不引人注目的，不显眼的
restrained *adj.* （行为）克制的，有节制的
arbitrary *adj.* 任意的
conserve *v.* 节约（水，能源等）

Proper names

Dieter Rams 迪特尔·拉姆斯（1932 –，德国著名工业设计师）
Braun 博朗（德国公司）

Classroom teaching

Teaching suggestions

1 Introduce the unit topic by presenting which designs in Task 1 have received the most ticks according to Ucampus statistics and raising a discussion on what is good about them.

2 Go through the infographic with the class to check Ss' understanding of the ten principles and figure out those that need further explanations.

3 Deal with the difficult principles by eliciting from Ss examples of products that meet or don't meet the criteria.

4 Ss work in groups to discuss the questions in Task 2. Ask 1-2 Ss to share their opinions.

Alternative activity

1 Ask Ss who Dieter Rams is and how important the ten principles were in his work.

2 Encourage Ss to consider the difference between art and design.

Ss' answers may be:

1) Dieter Rams (born 1932) is a German industrial designer and academic. He was the guiding force of Braun, a famous consumer products company. He formulated his ten principles in the 1970s as a way of deciding whether his own designs were good enough. He designed many classic products using these principles.
2) Art is about creating visual impact (e.g., something beautiful, shocking, or thought-provoking). Design involves a combination of visual impact and usefulness (e.g., something that looks amazing and also works brilliantly).

Reference answers

Task 1 Open-ended.

Task 2

1. I'm most impressed by the last one, "Good design is as simple as possible." The first thing that strikes me when I think of the word "design" is designer clothes and other products in boutique stores. They are often intricate, dazzling, and abundant with decorations, and they tend to have strong colors and unconventional designs. At the same time, things with little design, such as the clothes hangers we use every day, are often taken for granted. But these ordinary things are actually the most extraordinary: they are simple to use, and unlike the fashionable clothes, they are unobtrusive. Perhaps this is the best form of design.
2. My favorite clothes hanger is the second one. First, it is thinner than a wooden one, so it would save the space of my closet. Second, the non-slip design on both ends would stop clothes from slipping off. Third, the small hooks make it easy to hang pants and strappy dresses. Last but not least, unlike the third hanger, it does not leave marks on clothes. The third one provides little support and as a result leaves bumps on clothes and damages the fabric, so it is only useful for small clothes. But this one just suits all sizes.

   I chose the fabric suitcase. First, it is unobtrusive. It's a lot more low-key compared to the other two suitcases. I can take it to a trip without catching too much attention. Second, it is long-lasting. Suitcases with a shiny surface are easy to get scratched. But fabric is stronger, more durable and less likely to be scratched. Third, it is more practical. Fabric is more flexible than plastic, so fabric suitcases allow you to stuff more things into them. Fourth, it is lighter than leather suitcases, so it is the best choice for me.

Academic listening

Listening 1 Principles of good design

Audio script

Principles of good design

MARTA: Jack! Over here!

JACK: Oh, hey Marta. How's it going?

MARTA: OK … I just went to Professor Malik's office to ask about the assignment for the class I missed. He says we're supposed to evaluate a product using the design principles of Dieter Rams. Who is he? I'm kind of behind on the reading for that class.

JACK: Again? OK well, he's a German industrial designer who used to work for Braun, you know, the consumer products company? Back in the 1970s, he came up with 10 principles of good design that are still being followed today. Like, for example, a good design is innovative, long-lasting, environmentally friendly … And the most important one, I think, is that it should make the product understandable. He doesn't believe in designs that have a lot of unnecessary features. You know the classic Braun calculator? Rams designed that and you can see the influence in the iPhone calculator today.

MARTA: Really? I think my dad has one of those calculators – they're ancient. He's not very good with technology, so I guess it must be fairly "understandable!" Ha-ha! Anyway, have you chosen a product to evaluate for the assignment yet?

JACK: Yeah. A door.

MARTA: A door?

JACK: Yeah. The door to the college library, to be exact. Look, here's a photo … Can you see the problem?

MARTA: Um … no. Not really.

JACK: Look at the handle. Are you supposed to pull or push it?

MARTA: Well … hmm. It's not clear.

JACK: See, that's the problem. It's not clear. The handle is vertical, so naturally you want to pull on it. But that's not how it works. You have to push. Dieter Rams would say it's not understandable. Therefore it's a bad design.

MARTA: That's so interesting. I'd never have thought of that.

JACK: I found out that there's actually a name for badly designed doors. They're called "Norman doors," after Don Norman, who wrote a book called *The Design of Everyday Things*. He believes in what he calls "designing for humans," which is similar to Dieter Rams' principle that products should be understandable. Norman says doors are really simple devices. We shouldn't need written instructions like "pull" or "push" to figure out what to do – it should be obvious from the design.

MARTA: I completely agree with him. I wish all products were designed like that.

JACK: Especially electronic devices, like phones or tablets …

MARTA: No kidding! My parents need a set of written instructions to use the TV remote!

JACK: Ha-ha! Yeah, mine can't operate the microwave …

MARTA: Well, to be fair, I got a new coffee machine a few months ago, and I still don't really understand how to use it. It's got lots of great features, but I seem to spend more time reading the instruction manual than I do drinking the coffee.

JACK: Yeah, that's just bad design. Complex equipment doesn't need to be difficult to use.

MARTA: True. Argh … what am I going to evaluate for this assignment?

JACK: Try to think of something that is attractive, but also functional.
MARTA: Yeah, I need something simple … Oh, how about the glass measuring jug you use in the kitchen? You know the thing that has milliliters printed on the side so you can measure liquids?
JACK: Well, it's certainly useful …
MARTA: Right, and I'm sure Rams would agree it's "understandable." It's not like you need instructions to use it.
JACK: True. Also, it pioneered the use of a new heat-proof glass so you could say it was "innovative" at the time and the design hasn't changed for at least 100 years, so I guess you could argue it's "long-lasting" too.
MARTA: Definitely.
JACK: Well, it sounds like you've found a product for the assignment. Let me know if you need any help with anything.
MARTA: I will do. Thanks, Jack.

Words and expressions
vertical *adj.* 垂直的；直立的
tablet *n.* 平板电脑
manual *n.* （尤指机器的）说明书，使用手册
measuring jug 量壶；量杯
milliliter *n.* 毫升（液量单位）
heat-proof *adj.* 抗热的；耐热的

Proper names
Malik 马利克
Norman door 诺曼门（由唐·诺曼提出，指设计不佳，让人搞不清楚如何开的门）
Don Norman 唐·诺曼（1935 –，美国设计师）

Online course (before class)

Before you listen

Task 1 Match the words and expressions with their definitions.

1. come up with (*phr. v.*) G	A. to find the size, weight, or amount of something
2. complex (*adj.*) F	B. to be able to understand something or solve a problem
3. device (*n.*) D	C. to use or control a piece of equipment
4. feature (*n.*) H	D. a machine or piece of equipment used for a specific purpose
5. figure out (*phr. v.*) B	E. designed to be good at doing a particular job
6. functional (*adj.*) E	F. involving lots of details or small parts that make it difficult to understand
7. measure (*v.*) A	G. to think of an idea, plan, or solution

8. operate (*v.*) C	H. a part of something that you notice because it is important, interesting or typical

Task 2

Step 1 Complete the sentences with the words and expressions in the box. Change the form if necessary.

come up with	complex	device	feature
figure out	functional	measure	operate

1. Good design should be simple, never too complex.
2. It's important for any mobile device / devices to be attractive, and easy to use.
3. If you can't figure out how something works, it's badly designed.
4. Today's cell phones have too many hidden features.
5. Working in a group is the best way to invent products, and come up with new ideas.
6. There is no easy way to measure the success of a product's design.
7. You shouldn't need instructions to operate new technology.
8. Buy products because they're functional, not because they look good.

Step 2 Think about the sentences, and choose the one(s) you agree with.

1. Good design should be simple, never too complex.
2. It's important for any mobile device to be attractive, and easy to use.
3. If you can't figure out how something works, it's badly designed.
4. Today's cell phones have too many hidden features.
5. Working in a group is the best way to invent products, and come up with new ideas.
6. There is no easy way to measure the success of a product's design.
7. You shouldn't need instructions to operate new technology.
8. Buy products because they're functional, not because they look good.

Reference answers:

Open-ended.

Task 3 Look at the following pictures of everyday objects. Do you think they are well-designed? Why or why not? Choose one picture and give your opinion.

socket

measuring jug

coffee machine

multicolor pen

Your opinion:

_____

Reference answers:

I think the coffee machine is not well-designed. It seems to have a lot of features, and as a result, it is a little bit complex. It might be not easy to figure out how it works. I may have to read the instruction manual before I can make a cup of coffee.

Global listening

Listen to *Principles of good design* and rearrange the products in the order they are mentioned.

_____6_____ measuring jug
_____1_____ the Braun calculator
_____3_____ TV remote
_____5_____ coffee machine
_____4_____ microwave
_____2_____ Norman doors

Close listening

Task 1 Listen to *Principles of good design* again and choose the best answer to each question you hear.

1. Question 1
   A. It should be innovative.
   B. It should be long-lasting.
   C. It should be environmentally friendly.
   D. It should make the product understandable.

2. Question 2
   A. It is a poorly designed product.
   B. It is a product designed by Rams.
   C. It is a product designed in the 1970s.
   D. It is a product innovatively designed.

3. Question 3
   A. It costs more money than necessary.
   B. It is difficult to operate.
   C. It does not need a complicated instruction manual.
   D. It has few good features.

4. Question 4
   A. A TV remote.
   B. A coffee machine.
   C. A measuring jug.
   D. An automatic door.

Questions:

1. What is the most important principle of good design according to Jack?
2. Why is the Braun calculator mentioned?
3. What does Marta think about her coffee machine?
4. What does Marta choose to evaluate for her assignment?

Task 2 Answer the following questions according to what you have heard.

1. What does Jack say about the door in his school library?
2. What does Don Norman believe about doors?

Reference answers:

1. Jack thinks the door is badly designed. You need to push the handle to open it. But the handle is vertical, so naturally you want to pull on it. It's not clear.
2. Don Norman believes in what he calls "designing for humans." He thinks doors are really simple devices. We shouldn't need written instructions like "pull" or "push" to figure out what to do – it should be obvious from the design.

Academic listening skill

Task 1 Read the following paragraph to learn about the skill of inferring from context.

Inferring from context

Inferring is the process of drawing conclusions based on information that is implied, but not said directly. By listening for clues – the speaker's or speakers' words and tone of voice, and based on your knowledge of the world, you can make inferences about the conversation.

The following are common types of inference questions:
Who are the speakers? / What are they talking about? / How does the speaker probably feel about …? / What does the speaker mean by …? / Why does the speaker say …? / What can you conclude about …? / It can be inferred that …

Task 2 Listen to *Principles of good design* again and choose the best answer to each question you hear.

1. Question 1
   A. It is complicated.
   B. It has unnecessary features.
   C. It has a simple design.
   D. It is no longer in production.

2. Question 2
   A. He thinks designers can ignore the users of their products.
   B. He thinks doors are usually badly designed.
   C. He is interested in everyday items being simple to use.
   D. He thinks products should clearly state how they should be used.

3. Question 3
   A. Preserving food.
   B. Mixing powder.
   C. Measuring hot liquids.
   D. Boiling water.

4. Question 4

   A. She is a fast learner.

   B. She admires her father's understanding of technology.

   C. She is lazy.

   D. She lives in a university dormitory.

Questions:

1. What can we infer about the Braun calculator?
2. What can we infer about Don Norman?
3. What was Marta's kitchen jug designed to be most useful for?
4. What can we infer about Marta?

Classroom teaching

Teaching suggestions

Close listening

1 Ask Ss to read the questions in Task 2. Then play the recording. Ask Ss to take notes while listening.

2 After listening to the recording, Ss are supposed to answer the questions in turn with their partners. They can also share ideas and negotiate with group members.

3 After group discussion, T invites 1 or 2 Ss to share answers with the whole class. T gives comments on the Ss' answers.

Alternative activity

1 Ss watch a video or a picture about the special door design of Tesla which is designed differently from that of traditional automobiles. Tesla's doorknob is designed in an "invisible style".

2 Evaluate the special door design according to the 10 principles mentioned in the viewing part. For example, although this kind of design looks beautiful, simple and innovative, I think it is not practical and it may bring people trouble in opening the door, especially for kids and the elderly. Give your advice to help improve the design if possible.

Academic listening skill

1 Play the recording, and ask Ss to check the answer in Task 2 with group members and find more examples of inference.

2 Ask Ss to design one inference exercise for their partners. Check whether they can answer it correctly or not. Make comments on their mutual practice.

✧ Sample exercise:

1) Like Marta said, "Well, to be fair, I got a new coffee machine a few months ago, and I still don't really understand how to use it. It's got lots of great features, but I seem to spend more time reading the instruction manual than I do drinking the coffee."
2) What does Marta imply?
3) Well, actually, she is not satisfied with the design of the coffee machine. According to the design principles of Dieter Rams, this design is not understandable.

Online course (after class)

Oral practice

Task 1 The following sentences will help you evaluate product design. Translate the Chinese in brackets into English using the words and expressions you've just learned, and then record each sentence.

1. A good design is innovative (创新的), long-lasting, environmentally friendly … And the most important one, I think, is that it should make the product understandable (易于理解的) .
2. He doesn't believe in designs that have a lot of unnecessary features (特点，特征).
3. Norman says doors are really simple devices (设备，装置).
4. We shouldn't need written instructions (操作指南) like "pull" or "push" to figure out (理解) what to do – it should be obvious from the design.

Task 2 You will hear four clips of the conversation. Each clip will be played only ONCE. After you hear a tone, please repeat the exact words the second speaker has said. You may take some notes while you listen.

1.

JACK: See, that's the problem. It's not clear. The handle is vertical, so naturally you want to pull on it. But that's not how it works. You have to push. Dieter Rams would say it's not understandable. Therefore … it's a bad design.

MARTA: That's so interesting. I'd never have thought of that.

2.

JACK: Norman says doors are really simple devices. We shouldn't need written instructions like "pull" or "push" to figure out what to do – it should be obvious from the design.

MARTA: I completely agree with him. I wish all products were designed like that.

3.

JACK: Try to think of something that is attractive, but also functional.

MARTA: Yeah, I need something simple … Oh, how about the glass measuring jug you use in the kitchen?

4.

JACK: Well, it's certainly useful …

MARTA: Right, and I'm sure Rams would agree it's "understandable." It's not like you need instructions to use it.

Listening 2 VR and AR

Audio script

VR and AR

Hello everyone. My name is Russell McGraw and I'm a member of a team that works to design virtual reality and augmented reality products, not just games but also products with practical uses in fields like medicine, science, and even fashion. A lot of people are confused by the terms "augmented reality" and "virtual reality," so what I want to do today is define these terms, explain the similarities and differences between them and

give examples of some of their current and potential future applications.

Augmented reality and virtual reality have one major similarity, and that is that both are designed to alter our view of the world. However, the way they do it, and the technology they employ, are different.

Let me start by talking about augmented reality, or AR for short. AR has been in the news recently because of its use in the game Pokémon Go, which came out in 2016 and became a worldwide hit. To "augment" something means to add to it or increase it. For example, you can augment your income by taking a second job or working more hours. Augmented reality is a technology that layers or puts computer-generated content on top of the existing environment.

You view it through a device like a smartphone or a tablet. So, when people play Pokémon Go, they see the real environment around them, combined with artificial images of little monsters that players can interact with in all sorts of fun ways.

Now, in contrast, virtual reality is an artificial, computer-generated simulation – that means a copy – of a real-world environment. You enter the VR world via a specially designed headset like the one in this photo. The headset completely shuts out the real world and allows you to enter the virtual world. It feels real. The action takes place all around you, in 360 degrees, so you're encouraged to turn around, look around, and move around, like in the real world. The people and objects are three-dimensional and they appear life-size.

So, in short, while augmented reality places digital content in the real world, virtual reality is designed to take the viewer completely out of the real world. The two technologies are opposites in that way.

OK, until now, both technologies have been used successfully for entertainment and play. But more and more they're being used for practical purposes as well. Consider the field of aviation. Have you ever heard of a flight simulator? It's a machine for training pilots. It's designed exactly like a real airplane, and it has the ability to move in ways that simulate, or copy, the movement of an airplane as it takes off and lands, though of course it never actually leaves the ground. The pilot controls it just as he or she would a real plane. Virtual reality is used to create the landscape the pilot sees and to copy the kinds of messages and feedback that pilots normally receive. So, the simulator allows pilots to practice flying virtually in all kinds of weather, and to handle every sort of emergency safely and inexpensively.

In the medical field, augmented reality has been used to help students by layering a map of the bones and muscles onto a life-size, three-dimensional model of the human body. Also, virtual reality has been used to train surgeons in situations where it would be dangerous or difficult to operate on living people. And a very interesting use of augmented reality is in treating extreme fears called phobias. Let's say you have a person with arachnophobia, which is a fear of spiders. The normal treatment for phobias is to expose people to the thing they're afraid of in small, controlled amounts. But doctors don't usually keep jars of spiders in their offices. Virtual reality provides a practical substitute for the real thing.

Augmented reality also has many potential uses in the fashion industry. For example, today there are websites that allow you to upload a photo of yourself and then try on as many pairs of eyeglasses as you want. Soon there will be virtual dressing rooms and even virtual shopping malls. Someday soon there may be augmented

cooking lessons, or car repair, or an augmented GPS system that's part of the car's windshield, so drivers can get directions at the same time as they're looking at the road.

I see we're running out of time, so to finish I'll mention some future developments in the areas of virtual and augmented reality. One is the addition of haptic feedback to the virtual reality environment. The term "haptic" is defined as "relating to the sense of touch," for example someone touches you on the hand in your virtual world; in the real world using haptic feedback you'd actually be able to feel the touch. Amazing, right? The main development moving forward is that eventually augmented and virtual reality won't be separate experiences. Rather, they'll be combined to create a blended experience that has both real and artificial elements and that reduces the distance between real and digital worlds.

Words and expressions

augmented reality (AR) 增强现实
virtual reality (VR) 虚拟现实
simulation *n.* 模拟，仿真（尤用于试验）
aviation *n.* 航空；航空学
layer *v.* 铺一层……
phobia *n.* 恐惧(症)
arachnophobia *n.* 蜘蛛恐惧症
substitute *n.* 代替物，替代品
windshield *n.* （汽车前部的）挡风玻璃
haptic *adj.* 触觉的

Proper names

Russell McGraw 罗素·麦格劳
Pokémon Go 精灵宝可梦 Go（一款手机游戏）

Online course (before class)

Before you listen

Task 1 Complete the sentences with the words in the box.

artificial	computer-generated	feedback	layer
similarity	simulation	three-dimensional	

1. This is just one similarity between the two programs.
2. Computer-generated imagery (CGI) is a common feature of modern movies.
3. It's not real though. Players explore a(n) artificial universe.
4. Feedback on the game has been generally positive.
5. We used a computer simulation to test our design.
6. The program allows designers to layer text over the image.
7. Students build real three-dimensional models to explain their design.

Task 2 Look at the following pictures and answer the questions.

1. What are the people doing in the pictures?
2. What do you know about augmented reality (AR) and virtual reality (VR)?

Reference answers:

1. In the first picture, the woman is using a virtual reality headset to experience something and make moves accordingly. In the second picture, the person is playing a game called Pokémon Go using the augmented reality technology.
2. Augmented reality (AR) is a technology that layers or puts computer-generated content on top of the existing environment. Virtual reality (VR) is an artificial, computer-generated copy of a real-world environment.

Global listening

Listen to *AR and VR*, and complete the outline with the information in the box.

aviation	blended AR and VR experience
definition: augmented reality	definition: virtual reality
fashion	haptic feedback
medicine	similarity between AR and VR

1. Introduction (speaker and topic)
   1) Similarity between AR and VR: alter our perception of the world.
   2) Definition: augmented reality
   Ex.: Pokémon Go
   3) Definition: virtual reality
2. Uses of AR and VR today
   Entertainment
   4) Aviation
   5) Medicine
3. AR and VR in the future
   Fashion
   6) Haptic feedback
   7) Blended AR and VR experience

Close listening

Task 1 Listen to *AR and VR* again and fill in the blanks with *AR*, *VR*, or *Both*.

1. ___Both___ alter(s) our perception of reality;
2. ___AR___ combine(s) the real environment with artificial images;
3. ___VR___ require(s) a special headset;
4. ___Both___ is/are used for entertainment and play;
5. ___VR___ is/are used for training pilots;
6. ___VR___ is/are used to train surgeons;
7. ___VR___ will soon include haptic feedback.

Task 2 Answer the following questions according to what you have heard.

1. What are the differences between AR and VR?
2. In what ways are AR and VR used today?

Reference answers:

1. AR puts computer-generated content on top of the existing environment, while VR is an artificial, computer-generated simulation of a real-world environment.
2. In the field of aviation, VR can be used in a flight simulator for training pilots.
   In the medical field, AR has been used to help students by layering a map of the bones and muscles onto a life-size, three-dimensional model of the human body. Also, VR has been used to train surgeons in situations where it would be dangerous or difficult to operate on living people.
   AR also has many potential uses in the fashion industry. For example, today there are websites that allow you to upload a photo of yourself and then try on as many pairs of eyeglasses as you want.

Task 3 Work in pairs to discuss the following question.

In your opinion, how will AR and VR change our life in the future? What other potential application of AR and VR can you think of?

Reference answers:

Open-ended.

Academic listening skill

Task 1 Watch the mini-lecture and learn about the skill of listening for key terms. **You can watch the video on Ucampus.**

Task 2 Listen to *AR and VR* again and complete the definitions with the words or expressions in the box.

arachnophobia	augmented reality	haptic
to augment	virtual reality	

1. To augment something means to add to it or increase it.
2. Augmented reality is a technology that layers or puts computer-generated content on top of the existing environment.
3. Virtual reality is an artificial, computer-generated simulation – that means a copy – of a real-world environment.
4. Let's say you have a patient with arachnophobia, which is a fear of spiders.
5. The term "haptic" is defined as "relating to the sense of touch."

Classroom teaching

Teaching suggestions

Close listening

1 Ask Ss to read the questions in Task 2. Then play the recording. Ask Ss to take notes while listening.
2 After listening to the recording, Ss are supposed to answer the questions in turn with their partners. They can also share ideas and negotiate with group members.
3 After group discussion, T invites 1 or 2 Ss to share answers with the whole class. Finally, T gives comments on the Ss' answers.
4 Ask Ss to read the questions in Task 3 and pick one from the two to answer. Ss think individually for one minute, then jot down several points of how AR and VR will change our life in the future or the potential application of AR and VR. Remind Ss to pay attention to the fluency of their renderings. (fluency indicators – less accidental pauses, shorter pauses, less repetitions)
5 Ss share ideas with their partners and compare with group members.
6 T invites 1 or 2 Ss to share answers with the whole class. Finally, T gives comments on the Ss' answers according to the criteria provided. (fluency indicators – less accidental pauses, shorter pauses, less repetitions)

Academic listening skill

1 Ask Ss to tell their partners how to better understand a term in listening to a lecture according to what they have learned in the mini-lecture about listening for key terms.
2 Ask Ss to describe AR or VR through definitions, comparisons or examples (pick up at least two approaches from the three), and then share them with their partners. Pay attention to the usage of signal words and expressions in description.
3 T invites 1 or 2 Ss to share answers with the whole class. Finally, T gives comments on the Ss' answers according to the criteria provided. (fluency indicators – less accidental pauses, shorter pauses, less repetitions)

Alternative activity

1 Ask Ss to decide on a term they would like to describe, like "artificial intelligence," "primary effect," "behaviourism," etc. Then jot down the key points of the term by considering the perspectives of definitions, comparisons and examples.
2 Ask Ss to perform like a speaker explaining the term they chose to their group members.
3 T invites 1 or 2 Ss to share answers with the whole class. Finally, T gives comments on the Ss' answers.

Ss' answers may be:

Artificial intelligence, or AI for short, is a branch of computer science that aims to learn about how human intelligence works and to manufacture a new intelligent machine which can work in a similar way as human intelligence. It has practical uses in fields like robots, language recognition, image recognition and natural language processing, covering the knowledge of a variety of different subjects such as biology, material and psychology. Compared to traditional

subjects, AI has more potential, and is gradually beginning to replace human labour force in various areas.

Online course (after class)

Oral practice

Task 1 The following sentences will help you talk about AR and VR. Translate the Chinese in brackets into English using the words and expressions you've just learned, and then record each sentence.

1. Augmented reality and virtual reality (虚拟现实) have one major similarity (相似之处) , that is both are designed to alter our view of the world.
2. Augmented reality is a technology that layers or puts computer-generated (计算机生成的) content on top of the existing environment.
3. It's designed exactly like a real airplane, and it has the ability to move in ways that simulate (模拟), or copy, the movement of an airplane as it takes off and lands, though of course it never actually leaves the ground.
4. In the medical field, augmented reality has been used to help students by layering (铺一层……) a map of the bones and muscles onto a life-size, three-dimensional model (三维模型) of the human body.

Task 2 Read the following paragraphs and record them. Pay special attention to the underlined words or phrases that guide you through the paragraphs.

1. Let me start by talking about augmented reality, or AR for short. AR has been in the news recently because of its use in the game Pokémon Go, which came out in 2016 and became a worldwide hit. To "augment" something means to add to it or increase it. For example, you can augment your income by taking a second job or working more hours. Augmented reality is a technology that layers or puts computer-generated content on top of the existing environment.
2. Now, in contrast, virtual reality is an artificial, computer-generated simulation – that means a copy – of a real-world environment. You enter the VR world via a specially designed headset like the one in this photo. The headset completely shuts out the real world and allows you to enter the virtual world. It feels real. The action takes place all around you, in 360 degrees, so you're encouraged to turn around, look around, and move around, like in the real world. The people and objects are three-dimensional and they appear life-size.

Critical thinking

Getting the skill

Classroom teaching

Teaching suggestions

1 Use the following questions to help Ss think about the topic "developing and applying evaluation standards."

1) Why do we need to develop evaluation standards when we are making decisions?
2) What is the connection between evaluation standards and critical thinking?

✧ Notes:

When we decide how good / bad something is, we often do it by giving it a value (= a number). We also need to develop a checklist as a tool for evaluating in a particular area (e.g. a certain product or a program). A sound evaluation checklist clarifies the criteria that should be considered and reminds us not to forget important factors. With the help of a set of evaluation standards, we can compare the different values and make informed decisions. This process helps improve our critical thinking. Because an important part of critical thinking is moving away from feelings and opinions, and moving toward standards measuring things in order to evaluate them. For example, when we need to evaluate how reliable a particular website is, we might develop some standards to enable us to do that.

2 Ss' work in pairs to finish Task 1. Then, with these standards, they can move on to Task 2 to evaluate their own smartphone. When they are ready, ask volunteers to share their ideas with the class.

3 Ss work in groups to discuss the questions in Task 3. This task puts Ss' understanding of developing and applying evaluation standards into practice. Remind Ss to use such standards to evaluate the qualities of arguments in their future studies.

Alternative activity

Ss work in groups to develop evaluation standards for deciding where to work and live after graduation. When they are ready, ask volunteers to share their ideas with the class.

Ss' answers may be:

The following are some of the possible evaluation standards for deciding whether to work and live in a certain city after graduation.

1) What is the job market like in the city?
2) What is the average income for graduates in your major?
3) What is the cost of living in that city?
4) What is the housing price in that city?
5) How is the weather and air quality in that city?
6) Is the city in or around the areas where your loved ones live?

Reference answers

Task 1

Open-ended.

Task 2

I think my smartphone is perfect. First, as it is built on the open-source Android system, I can download many latest applications without worrying about compatibility. Second, it has a MicroSD card slot, enabling me to expand the storage space easily. Third, it has many useful features, such as wireless charging, faster charging, and dual-SIM support. Like those expensive phones, it also uses top chips and has first-class performance, but is at a lower cost. It has proved to be an excellent device for nearly half the price of its competitors.

Task 3

1. The conclusion is that we should ban the use of cell phones in classrooms.
2. Yes, he does. The writer presents the readers with examples and research findings.
3. They are not that reliable as the readers are not aware where these examples and research findings come from.
4. Yes. The writer doesn't write about the good aspects of using cell phones in the classroom or the necessary reasons for doing so. It is a one-sided argument.

A cross-cultural view

Video script

Furniture design: Elegance or Luxury

The Age of Elegance: the Ming-style Furniture

Representing the peak of Chinese furniture, the Ming-style furniture is treasured for its simple decoration, precious wood, comfortable design, and superb craftsmanship.

The Ming-style furniture was heavily influenced by the aesthetic preference of the literary scholars at that time. Before then, few scholars got involved with the handicraft industry. In the Ming Dynasty, however, even the emperor Zhu Youjiao was said to be keen on carpentry and make woodware on his own. As a result, the scholars' tastes helped shape the Ming-style furniture into an elegant and natural style, with a notable feature of simplicity. The scholars grasped the essence of "less is more." Decoration for decoration's sake was rejected. The smooth lines and simple decoration revealed a sense of peace and calmness.

The minimal decoration also helped reveal the natural beauty of the color and texture of the wood. In the Ming Dynasty, durable and precious hard wood such as red sandalwood and scented rosewood were imported from tropical areas. They emitted pleasant smells, naturally adding a touch of elegance and grace to the furniture.

Don't assume ergonomic design, which emphasizes the comfort of the user, to be a modern concept. In the Ming-style furniture, you would see this concept embedded in many subtle details such as how the curves were formed. Skillful craftsmen in the Ming Dynasty were able to design the furniture to match the body shape.

Moreover, they didn't use a single nail but various artful connections, exhibiting their mastery of craftsmanship.

Chinese traditional culture, such as Chan (禅) and Dao (道), emphasizes the positive interaction between nature and human beings. Through applying these ideas, scholars and craftsmen transformed the design of furniture, creating a Golden Time of Chinese classical furniture.

The Age of Luxury: Baroque Furniture

While the scholars and craftsmen of the Ming Dynasty were pursuing the beauty of simplicity and the harmony between nature and human beings, Europeans established a totally different style when they entered the baroque era.

Following the Renaissance, the baroque period was characterized by the use of abundant decorations. This style was encouraged by the Roman Catholic Church to impress the worshippers and exhibit authority. The nobility and elites also used this style to show off their wealth and power.

The baroque style features the excessive use of gold set with dark colors, symmetrical patterns, dramatic shadows, and serious themes. Baroque-style furniture was built to be large and heavy, its legs thick and strong. Architectural features like columns were commonly used, showing a sense of solidity. So, if you see a piece of furniture that is heavy, symmetrical and of dark color, like this one, it's probably baroque.

Teaching suggestions

1 Write the following adjectives on the board:

elegant	luxurious	unpretentious
sophisticated	minimalist	elaborated

Ask Ss to decide which ones fit the description of the Ming-style furniture and which ones fit the description of baroque-style furniture. Explain the difficult words to Ss. Ask Ss to give the noun forms of these adjectives to see if they can correctly convert from adjectives to nouns and vice versa. The noun forms are "elegance, luxury, unpretentiousness, sophistication, minimalism, elaboration."

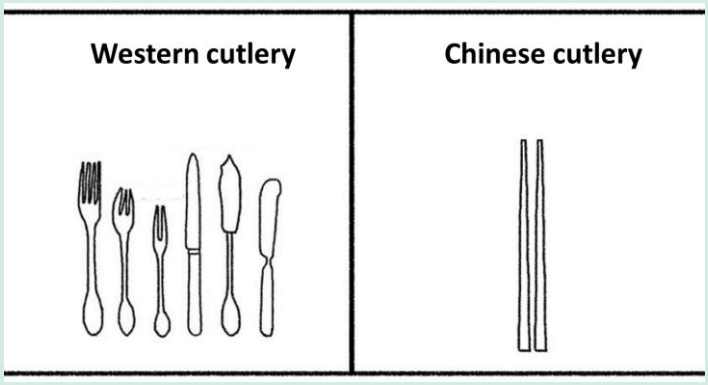
2 Check Ss' answers in Task 1 to see if they understood the content in the video. Play the video for the class. Pause the video where students made most mistakes and guide them to get the correct answers.

3 Play the video again and make Ss work in groups to discuss the questions in Task 2. When they are ready, ask volunteers to share their ideas with the class.

4 Divide Ss into groups to discuss the questions in Task 3. Remind them to follow the steps provided. When Ss are ready, ask volunteers to present their group answers to the class.

Alternative activity

Compared with Western dinning knives, forks and spoons, Chinese chopsticks reveal simplicity and versatility in design. Show the following image to Ss and ask them to discuss the differences between Chinese and Western cutlery.



Ss' answers may be:

Chopsticks have been used in China for thousands of years while the knife and fork is relatively later and is mainly used by Western countries. In Chinese cooking, almost everything is sliced and diced into smaller pieces before served to the table, so Chinese people don't need forks and knives. They can comfortably use this simple device to enjoy meals.

Reference answers

Task 1

1. True
2. False
3. False
4. False
5. True
6. False

Task 2

1. Simple decoration, precious wood, comfortable design, and superb craftsmanship.
2. The Baroque-style furniture is characterized by the use of abundant decorations. Other features include the excessive use of gold set with dark colors, symmetrical patterns, dramatic shadows, and serious themes. The Baroque-style furniture is also large and heavy.
3. Furniture design is often influenced by culture. Chinese furniture designers in the Ming Dynasty were influenced by the Chan and Dao ideas that highlight the harmony between man and nature. This pursuit was reflected in their artistic preferences. They wanted to build something that was calm and subtle. However, Europeans at that time were heavily influenced by Catholic aesthetics to exhibit their wealth and power.

Task 3

Version 1:

- First, I want to choose something that fits the general setting and is unobtrusive. Second, I hope it to be good for my body. Third, it must be long-lasting.
- The first picture shows a piece of Ming-style furniture. It is simple, elegant, and embodies multiple cultural elements. The second one is a piece of baroque furniture. It is large and soft, and is decorated with gold and symmetric patterns.
- Based on my three principles, I would like to choose the first piece. First, its simple design makes it suitable for modern settings, and it adds a taste to the environment. If I use this piece, together with other Chinese-style decorations, my house would be elegant. Second, its design is good for my body. Sofas are built so soft that I sink into them easily, unable to hold myself straight. This is actually harmful to my spine and neck. Third, it is long-lasting. I have old furniture passed down from my grandparents, and they are still good to use. If I buy this one, I believe it can be used for generations, which is also good for the environment.

Version 2:

- First, I want to choose something that fits the general setting and is unobtrusive. Second, I hope it to be comfortable. Third, it must be ornamental.
- The first picture shows a piece of the Ming-style furniture. It is simple, elegant, and embodies ample cultural elements. The second one is a piece of baroque furniture. It is large and soft, and is decorated with gold and symmetrical patterns.
- Based on my three principles, I would like to choose the second piece. Modern buildings often have white walls, glass windows and modern home appliances. Therefore, the first one might be a little bit obtrusive, as its classic style might not fit the modern environment. While the second one looks soft and thus comfortable. When it is cold, I'd like to curl up on it and stay cozy. One more thing to consider is its visual power. I prefer ornate and luxurious things, because they would add a sense of vitality to my room. And the exquisite details just light me up.
- Therefore, I would choose the second one when decorating my house.

Academic communication

Online course (before class)

Speaking model

Read the conversation about designing a new product that solves problems, and then answer the following questions.

Alex: Let's start by identifying a problem that needs to be solved. And then we'll try to come up with a product, or process for solving it. Does anyone have an idea?

Lizzie: I do. Where I live, it rains all the time, and I always get soaking wet.

Alex: That problem has been solved. Get an umbrella.

Lizzie: But umbrellas are terribly designed. They're constantly breaking, and they're dangerous. I wish someone would invent an umbrella that doesn't break, turn inside out in a strong wind, or poke people in the eye.

Sevban: Oh, I agree! I get hit by umbrellas all the time; it's really annoying.
Lizzie: And another problem is that it's real pain to close most umbrellas. You have to use both hands, and it's hard to fold them up properly.
Alex: You're right. So, we need to design an umbrella that is safe, doesn't break, and that's easy to close up. Any ideas?
Lizzie: I think we could solve the first problem if the umbrella frame were made of plastic instead of aluminum (铝). Plastic is flexible, so the umbrella would bend instead of breaking in the wind. A product like that would be longer-lasting, and much more environmentally friendly.
Alex: What about making it easier to close?
Sevban: I have an idea. You know how a lot of umbrellas have a button you can push so they open instantly? What if our umbrella had a button you could press to close it instantly? All we'd need is a simple mechanism … **Alex:** You could do it with one hand.
Lizzie: That would be really useful.

1. What problem is the group trying to solve?
2. What three issues do the students have with umbrellas?
3. What solutions do they come up with?
4. How do the speakers invite each other to share ideas?
5. What do the speakers say to show their frustration with umbrellas?

Reference answers:

1. The group is trying to solve the problem of badly-designed umbrellas.
2. Umbrellas constantly break, are dangerous, and are difficult to close properly.
3. Making the frame using plastic instead of aluminum and adding a simple closing mechanism.
4. "Does anyone have an idea?" "Any ideas?" "What about making it easier to close?"
5. "Umbrellas are terribly designed" "It's really annoying."

Speaking skill

You can watch the video on Ucampus.

Mini-lecture

Watch the mini-lecture and learn about the skills that you may need to talk about a product design that solves problems.

Oral practice

Task 1 The following sentences will help you talk about problems with badly designed products. Translate the Chinese in brackets into English using the words and expressions you've just learned, and then record each sentence.

1. Let's start by identifying a problem (确定问题) that needs to be solved. And then we'll try to come up with (提出) a product, or process for solving it.
2. But umbrellas are terribly designed (设计得很糟糕). They're constantly breaking, and they're dangerous.
3. And another problem is that (另一个问题是) it's real pain to close most umbrellas. You have to use both hands, and it's hard to (难以) fold them up properly.
4. I wish someone would (我希望有人能够) invent an umbrella that doesn't break, turn inside out in a strong wind, or poke people in the eye.

Task 2 You will hear two clips of the conversation. Each clip will be played only ONCE. After you hear a tone, please repeat the exact words the second speaker has said. You may take some notes while you listen.

1.
Alex: You're right. So, we need to design an umbrella that is safe, doesn't break, and that's easy to close up. Any ideas?
Lizzie: I think we could solve the first problem if the umbrella frame were made of plastic. Plastic is flexible, so the umbrella would bend instead of breaking in the wind.

2.
Alex: What about making it easier to close?
Sevban: I have an idea. What if our umbrella had a button you could press to close it instantly?

Task 3 Now it's your time to role-play the discussion. Firstly, choose the way you want to do the task. You can click on Scripts to role-play it, or you can do a more challenging task by clicking on Hints to role-play it according to the hints in Chinese. Then choose the role you want to play.

Alex: Let's start by identifying a problem that needs to be solved. And then we'll try to come up with a product, or process for solving it. Does anyone have an idea?
(表明应当先确定要解决的问题，然后提出产品设计或解决方案；鼓励小组成员贡献想法。)
Lizzie: I do. Where I live, it rains all the time, and I always get soaking wet.
(提出雨天不便的问题。)
Alex: That problem has been solved. Get an umbrella.
(表明这个问题靠打伞就能解决。)
Lizzie: But umbrellas are terribly designed. They're constantly breaking, and they're dangerous. I wish someone would invent an umbrella that doesn't break, turn inside out in a strong wind, or poke people in the eye.
(指出雨伞的设计缺陷：易损坏且容易造成危险；提出自己的期待：希望能发明一种不易损坏、刮风时伞面不会外翻，且不容易戳到行人眼睛的雨伞。)
Sevban: Oh, I agree! I get hit by umbrellas all the time; it's really annoying.
(表示赞同此观点并提供例证，表达个人感受。)
Lizzie: And another problem is that it's real pain to close most umbrellas. You have to use both hands, and it's hard to fold them up properly.
(指出雨伞的另一个问题：无法单手收伞，伞面不好整理。)
Alex: You're right. So, we need to design an umbrella that is safe, doesn't break, and that's easy to close up. Any ideas?
(表示同意；总结新型雨伞应该具有的特点：安全、不易损坏、收伞方便；鼓励组员贡献解决方案。)
Lizzie: I think we could solve the first problem if the umbrella frame were made of plastic instead of aluminum. Plastic is flexible, so the umbrella would bend instead of breaking in the wind. A product like that would be longer-lasting, and much more environmentally friendly.
(提出解决方案：伞架采用塑料而不是铝，因为塑料更有弹性，在风中可能会变弯，但不会折断，这样的设计可以使产品更耐用、更环保。)
Alex: What about making it easier to close?
(询问如何改进收伞方式。)

Sevban: I have an idea. You know how a lot of umbrellas have a button you can push so they open instantly? What if our umbrella had a button you could press to close it instantly? All we'd need is a simple mechanism …
(提出解决方案并加以说明：参照有些雨伞通过按钮来开伞的设计，可以用按钮来控制收伞。)
Alex: You could do it with one hand.
(评价组员的方案，指出这样的设计可以实现单手收伞。)
Lizzie: That would be really useful.
(评价组员的方案，对讨论进行总结。)

Teaching suggestions

Speaking model

1 Introduce objectives of Academic speaking.
2 Tell Ss to read the conversation and work in pairs to discuss the questions.
3 When they are ready, ask volunteers to share their answers with the class.

Speaking skill

1 Comment on Ss' online performance.
2 Go through the key points of the speaking skill with the Ss.

Alternative activity

1 Ask Ss to underline all the useful phrases for speaking about problems and solutions.
2 Elicit a list from the class.
3 Tell them to read the information in the box to compare their list with the list of useful phrases in the box.

Ss' answers may be:

1) Talking about problems:

- Let's start by identifying a problem that needs to be solved.
- And then we'll try to come up with a product or process for solving it.
- It's really annoying.
- And another problem is that it's a real pain to ...
- You have to ..., and it's hard to ...

2) Talking about solutions:

- That problem has been solved.

- I wish someone would ...
- So we need to ...
- I think we could solve the (first) problem if (+ subject + past simple)
- What about ...?
- What if (+ subject + past simple)?
- All we'd need is ...

Skill enhancement

Tell Ss to choose one from the pictures and share their own similar experiences with the group members. Encourage them to use the tips from the speaking skill.

Ss' answers may be:

1) Pic 1: I have several problems with the seats of an airplane. First, they are hard to **adjust**. You have to undergo a complex **operation** and use your body weight to change the angle of the back. Second, they cannot **guarantee** enough space for the other passengers when the back is put down. Maybe we can have a design that when you pull the **trigger**, the seat **back** will be automatically tilted a bit and at the same time the seat **bottom** will move forward. The more the back **tilts**, the more the bottom goes forward. In this way, both problems can be solved.
2) Pic 2: The main difficulty in opening this **can** is that you can hardly turn the cover which is **round** and **smooth**. I suggest the cover of cans can be designed into an **octagon** with **rough** texture, which can create more **friction**.
3) Pic 3: The obvious issue of the **faucet** is that when you lift the **trigger**, your hand is exactly under the **tap** and the water will **splash** all over the place. I wish at least the direction of either the faucet or the trigger is **adjustable**. Thus the problem will be solved.

Speaking task

Brainstorm

1 Ask Ss to brainstorm in groups. They don't need to find exactly one problem or need in each area – the prompts are just there to generate ideas.
2 Monitor carefully to help any Ss who are struggling to come up with ideas.

Plan

1 Allow plenty of time for the planning stage. Ask Ss to choose one problem as quickly as possible in order to spend more time on the problem-solving tasks. Encourage them to finish in the outline and use the creative problem-solving techniques and language acquired from this unit.
2 Monitor carefully to ensure all groups are making good progress.

Speak

1 Let Ss work in their groups to plan and practice presenting their new product. They should also decide which group members will deliver each part of the presentation.

Share

1 Ask the groups to take turns to present their new products. Make sure they pay attention to each other's presentation. Encourage them to ask questions about other groups' presentations.
2 At the end, hold a class vote to choose the most creative new product.

Reflect

1 Ask Ss to evaluate their own presentations by answering the listed questions.
2 Comment on Ss' presentations.
3 Ask Ss to upload their presentations after class.

Unit review

Online course (after class)

Vocabulary

☐ I can use words and expressions about design.

Listening

☐ I can infer meaning from context.

☐ I can listen for key terms.

Speaking

☐ I can talk about problems and solutions.

Critical thinking

☐ I can develop and apply evaluation standards.