



English for Academic Purposes 2.0

Sample

Reading Examination

This paper contains **THREE (3)** Reading texts.
Answer **ALL** questions.

Time: 1 hour

The maximum mark for this paper is 40.

Any reference material brought into the examination room must be handed to the invigilator before the start of the examination.

All answers must be written in the answer booklet provided. Do **NOT** write your answers on this paper.

Please complete the boxes below:

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| Candidate name | |
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| Centre name | |
| Centre number | |
| Examination date | |

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| Reading |
| Answer ALL questions |

Reading Text 1

How music heals

Read the journal article and answer the questions below.

Neuroscientific research can help us to understand the therapeutic effects of music, as Leigh Riby explains

1

There is a renewed fascination with the memory-stimulating and healing powers of music, which can primarily be attributed to recent breakthroughs in neuroscientific research. The research has substantiated music's therapeutic properties, such as emotional regulation and brain re-engagement, which has led to a growing integration of music therapy with conventional mental health treatments.

2

Musical interventions have already been shown to help people with cancer, chronic pain and depression. The debilitating consequences of stress, such as elevated blood pressure and muscle tension, can also be alleviated through music.

3

As both a longtime music fan and neuroscientist, I believe music has a special status among the arts, because of the breadth and depth of its impact on people. Autobiographical memory retrieval is one of the critical aspects of the power of music, encouraging often highly personal recollections of past experiences. We can all recount an instance when a tune has transported us back in time, rekindling recollections and stirring our emotions. Enhanced recollection can also occur in dementia patients, for whom the transformative impact of music therapy sometimes opens a floodgate of memories.

4

In our laboratory at Northumbria University, we aim to harness these recent advances in neuroscience to deepen our understanding of the intricate connection between music, the brain and mental wellbeing. We want to answer specific questions, such as why sad or bittersweet music plays a unique therapeutic role for some people, and which parts of the brain it touches.

5

Advanced research tools, such as high-density electroencephalogram (EEG) monitors, enable us to record how the regions of the brain talk to each other in real time, as someone

listens to a song or symphony. The brain's regions are stimulated by different aspects of the music, such as its emotional content, melodic structure, lyrics and rhythmic patterns.

6

Of course, everyone's response to music is individual, so we also ask our study participants to describe how a particular piece of music makes them feel, including its ability to encourage profound introspection and evoke meaningful memories.

7

Throughout history, many cultures have embraced the healing powers of music. Music's origins predate aspects of language and rational thinking. Its origins can be traced back to the Palaeolithic period, more than 10,000 years ago, when early humans used music for communication and emotional expression. Archaeological finds include ancient bone flutes and percussion instruments made from bones and stones, markings noting the most acoustically resonant place within a cave and cave paintings depicting musical gatherings.

8

Music in the subsequent Neolithic period went through significant development. Excavations have revealed various musical instruments, including harps and complex percussion instruments, highlighting music's growing importance in religious ceremonies and social gatherings during this period, alongside the emergence of rudimentary forms of music notation, evident in clay tablets from ancient Mesopotamia.

9

The Greek philosophers Plato and Aristotle both recognised music's central role in the human experience. Aristotle, for example, said that ... music has a power of forming the character, and should therefore be introduced into the education of the young .

10.

Ancient Egyptians incorporated music into their religious ceremonies, considering it a therapeutic force. Native American tribes, such as the Navajo, used music and dance in their healing rituals, relying on drumming and chanting to promote physical and spiritual wellbeing. In traditional Chinese medicine, specific musical tones and rhythms were believed to balance the body's energy (qi) and enhance health.

11.

During the Middle Ages and the Renaissance, the Christian church was pivotal in popularising music for the masses . Congregational hymn singing allowed worshippers to engage in communal music during church services. The shared musical expression was a powerful medium for religious devotion and teaching, allowing a largely non-literate population to connect with their faith through melody and lyrics. Communal singing is not

only a cultural and religious tradition, but has also been recognised as a therapeutic experience.

12.

We are now beginning to identify two core elements of music therapy: emotional regulation and the powerful link to personal, autobiographical memories. Our ongoing research is concentrated on unravelling the intricate interactions between these essential elements and the specific brain regions responsible for the observed effects.

13.

Of course, the impact of music therapy extends beyond these new developments in neuroscience. The sheer pleasure of listening to music, the emotional connection it fosters and the comfort it provides transcend scientific measurement. Music speaks to the core of our human experience, in a way that cannot easily be defined or documented.

14.

Or, as one of our study participants put it: Music is like that reliable friend who never lets me down. When I m low, it lifts me up with its sweet melody. In chaos, it calms with a soothing rhythm. It s not just in my head; it s a soul-stirring [magic]. Music has no boundaries – one day it will effortlessly pick me up from the bottom, and the next it can enhance every single moment of the activity I m engaged in.

(Adapted from: Riby, L. (2024) How music heals: Neuroscientific research can help us to understand the therapeutic effects of music. *Healthcare Counselling and Psychotherapy Journal* April 2024 24(2) pp. 8-14.)

Task 1

Match the numbers of paragraphs 1 to 7 with the headings (a) to (i) below. You will **not** need TWO (2) headings.

a) Responses to parts of a song.

b) Different to other art forms.

c) Music's roots.

d) Personal reactions.

e) Music's curative effects rediscovered.

f) Better than a doctor.

g) Health issues helped by music.

h) Playing music with a bone.

i) The effects of specific genres.

Total 7 Marks

Task 2

Read paragraphs 1-14. Answer each question by choosing the best option: a, b, c, or d.

- 8** Why are scientists re-examining the healing powers of music? **1**
- a. Conventional mental health treatments are not working.
 - b. Progress has been made in studies of the brain.
 - c. Music is enjoyable to listen to.
 - d. More people are suffering from illnesses.
- 9** How do EEG monitors help research into music therapy? **1**
- a. They can record music.
 - b. They help people hear the words of song.
 - c. They allow people to relax while listening to music.
 - d. They show active areas of the brain.
- 10** What do ancient cave paintings show? **1**
- a. That music has always been important for people.
 - b. That people didn't use to have spoken language.
 - c. How to make instruments from bones.
 - d. Research was conducted even in ancient times.
- 11** What did people from the Neolithic period, Ancient Egypt and the middle ages have in common? **1**
- a. They danced to music.
 - b. Their children enjoyed music
 - c. They had different kinds of instruments.
 - d. They used music to worship.
- 12** What is Doctor Riby's team now investigating? **1**
- a. The ways in which music can heal the brain.
 - b. How music helps people interact.
 - c. The link between what we remember and how we feel.
 - d. How music has healed people throughout history.

- 13 What is NOT given as a reason for listening to music?
- a. It is enjoyable.
 - b. It creates a sentimental bond.
 - c. It can lead to friendships.
 - d. It provides solace.

1

Total 6 Marks

Reading Text 2 Self-driving cars

Read the introduction to a research paper and answer the questions below.

Modern economies and lifestyles propose changes in existing transport systems with an increased demand for new technologies. Autonomous vehicles (AVs), such as self-driving cars, are among the main transport challenges of the 21st century. Technological advances associated with connectivity and autonomy can change the way vehicles behave, potentially providing benefits to society and city infrastructure. Among the potential benefits of AVs are increased mobility for people with disabilities and the elderly, a substantial reduction in the number and severity of accidents, reduced congestion and emissions, and efficient use of the infrastructure.

The concept of self-driving cars is the partial or complete movement of a vehicle with little or no human assistance. They must autonomously navigate smoothly and avoid obstacles, while accurately interpreting the highly complex meaning of the scene and dynamic activities. For efficient operation and safety, an AV should not only understand the current state of the traffic and its surroundings, but also proactively anticipate their future behaviour. Therefore, it is important to understand and correctly predict the behaviour of vehicles and pedestrians. Practical limitations in observing the surrounding environment and the required computational resources to execute prediction algorithms also add to the complexity of the problem.

As computing power increases and the costs of sensing and computing technologies decrease, research into autonomous systems has seen dramatic advances in recent years, resulting in a maturing technological readiness level for fully self-driving cars. There are concerns about the possible consequences of autonomous technology, particularly regarding people's safety. To ensure that an autonomous vehicle (AV) is safer and ready for mass production, different scenarios must be modelled and tested. These tests are often performed in simulation or in a controlled real-world environment since regulations still restrict the use of these vehicles in cities. Simulations can be used to verify the performance of autonomous algorithms before testing them in real-world scenarios. Although simulations have the potential to evaluate AVs systems, not all simulators are able to provide the necessary realism required.

Testing with real AVs is costly and time-consuming, while simulation-based testing often lacks adequate similarity to the real world. Recently, to bridge this gap, several efforts have

emerged for testing autonomous software-hardware on scaled vehicles, where simulations are often coupled with field testing. A safe testbed for evaluating software at different speeds and accelerations, with dynamic and adversarial environments are among the advantages of testing autonomous technology in small-scale. Additionally, small-scale environments offer an alternative to simulation when studying conditions and challenges that are difficult to realistically replicate or too risky to physically implement at full scale. For example, crash scenarios involving complex vehicle dynamics and impacts on the surroundings, along with dynamic lighting and weather conditions, present a unique set of challenges that are safely addressed when using a small-scale environment.

The existing literature on scaled self-driving cars appears to be scattered and covers only some of the relevant aspects of the topic. To the best of our knowledge, only the work of Betz et al (2022) provides an overview of studies involving scaled self-driving cars, though it focuses solely on autonomous vehicle racing. Therefore, there is a need to synthesise and evaluate what is currently known about the subject, which is the main contribution of this paper. The objective of this paper is to investigate the current state of the literature surrounding small-scale self-driving cars and to identify gaps in the reviewed papers to provide guidance for future research. This will be achieved by addressing the following research questions (RQs).

RQ1. What characterises existing literature on small-scale self-driving cars?

RQ2. Which problems/objectives do the papers seek to address?

RQ3. Which hardware is used in the studies?

RQ4. Which software techniques are used in the studies?

RQ5. Which findings are reported in the papers?

RQ6. Which future studies are suggested in these papers?

(Adapted from: da Silva Rodrigues, L., da Silva Stamboroski, J., Madeiros Pereira, B. (2024) Small-scale self-driving cars: A systematic literature review. *Journal of Traffic and Transportation Engineering* April 2024 11(2) Pp. 271-292.)

Task 3

Complete the summary below by filling each gap with **ONE (1) word** from the text.

Autonomous vehicles are part of a technological change which can possibly provide (14) _____ to society, especially cities. Examples of these are greater (15) _____ for the disabled, fewer (16) _____, and less congestion and pollution. Self-driving cars means cars are driven with reduced (17) _____ from people. The vehicles have to find their way around a city, while staying away from (18) _____. They should understand the present state of traffic and anticipate what it will do in the future. Making these predictions is a problem with a great deal of (19) _____. Much research has been carried out in recent years. The (20) _____ of AVs, especially related to safety, are still leading to (21) _____. Models are therefore created and the AVs must be tested. (22) _____ limit these trials from being conducted in cities so they have to be done in a (23) _____ environment which simulates the real world. The simulations do not always replicate the real world, so once these tests are passed, AVs are taken into real cities. These tests are (24) _____ and take time. Small-scale experiments have therefore been devised. Replicating a crash with authentic lighting and (25) _____ is easier to do in a small-scale model. Existing research is (26) _____. Current knowledge needs to be synthesised and evaluated in order to identify gaps for future research. Six research questions were formed.

Total 13 Marks

Reading Text 3

How AI affects our sense of self

Read the text and answer the question below.

AI (artificial intelligence) technologies and advanced automated features are integrated in many products and are transforming how we accomplish a variety of tasks in our personal lives: iRobot's Roomba cleans your floors, Tesla's Autopilot lets you enjoy the ride, (27) _____. Increasingly, too, people are working with AI-driven applications on the job. IBM's Watson teams up with employees at many companies on a wide range of business tasks, including financial estimates and the management of marketing communication strategies; Adobe's AI empowers designers and enhances (33) **their** creative expression with Photoshop and other applications; and workers at Toyota operate highly automated tools and machinery. The recent advent of large language models and generative AI, such as OpenAI's DALL-E and ChatGPT, is likely to accelerate these trends. How will our interactions with all these automated technologies influence our sense of identity and accomplishment? And how will that influence the demand for products?

Our lab has explored how people react to automated products in the context of identity-based consumption, (28) _____. In six studies and across various product categories, we found that people who identify with a particular activity, such as fishing, cooking, or driving, may experience automation as a threat to their identity, leading to reduced product adoption and lower product approval.

To learn more about this phenomenon, the authors conducted a study with Dutch participants and focused on cycling, an activity that is central to many Dutch people's sense of self. To temporarily make (34) **them** identify even more strongly with cycling, half the participants were asked to write a short essay about the Dutch national passion for (35) **it**, and the remaining half were asked to write an essay about the Dutch passion for flowers (the control condition). Then, (29) _____. The authors told them about a special offer from a bike shop and asked about their interest in adding a free automated feature to their own bikes: a rechargeable battery to assist with pedalling. Participants who had written about cycling were 20% less likely to accept the feature, even though (36) **it** was free.

In another project, with the same team and Maria Cristina Cito of Bocconi University, the researchers examined a complementary issue: how people who are motivated by identity-relevant goals respond to companies' digitalization efforts. Across three main studies and five follow-up experiments, (30) _____. People simply can't express who (37) **they** are as easily with digital products. Seeing the collected works of Shakespeare on your Kindle is not nearly as powerful a way of validating your literary identity as seeing that same collection on your living room bookshelf.

Findings from these two projects indicate that when people identify with a certain product category, (31) _____, they sometimes resist any technological enhancement of those products. When that's the case, what should businesses do?

We recommend that companies refrain from targeting identity-motivated consumers with fully automated products, and that when (38) **they** do target such consumers, they focus on features or tasks that allow users to feel proud and involved. Consider the case of a bicycle-component manufacturer we worked with. Sometime earlier the company had introduced an

expensive automatic gear-shifting device in the European market and had targeted cycling enthusiasts, (32) _____. But those consumers showed little interest in the device, because they felt that (39) **it** would eliminate a central part of the cycling experience for them. (40) If the company had marketed to commuters or casual bikers or had designed the feature in a way that gave riders a feeling of more control, it might have had greater success.

(Adapted from Yalcin, G. and Puntoni, S. (2023) How AI affects our sense of self. *Harvard Business Review* September/October 2023 101(5))

Task 4

SIX (6) clauses have been removed from the text. Choose the clauses 1-7 which best fill each gap. You will NOT need ONE (1) of the clauses.

a) or when products help them express their beliefs and personalities

b) after that task they took part in an ostensibly unrelated study

c) Jura's fully automatic coffee machine prepares your coffee from bean to cup and even cleans itself

d) which helps customers to identify benefits and risks

e) which helps people define who they are

f) who are more willing to pay for mechanical gadgets

g) they found that symbolic products are adopted less often in digital form than they are in physical form

Total 6 Marks

Task 5

Write ONE (1) or TWO (2) words to describe what the underlined words in the text refer to.

33) their = _____

34) them = _____

35) it = _____

36) it = _____

37) they = _____

38) they = _____

39) it = _____

Total 7 Marks

Task 6

Read the final sentence of the text and answer the question by choosing the best option: a, b, c, or d.

40) Which is closest to the meaning of the final sentence?

- a. The company had great success with the product.
- b. The company did not market the product to cycling enthusiasts.
- c. The product did not sell as well as it could have done.
- d. The product enabled riders to feel a great deal of control.

Total 1 Mark

END OF PAPER