Unit 3: Technology usage as a solution

3.5. AI as the new key elements in the future smart cities

Duration: 1h30 minutes

Teaching topics:
- Sub-topic 1: How will AI change the cities we live in?
- Sub-topic 2: AI applications in smart cities.
- Sub-topic 3: Future smart cities planned by 2050.

Learning Aims:
- To understand the impact of AI on the development of future smart cities.
- To explore various applications of AI in urban environments.
- To recognize the opportunities and challenges from AI in smart cities.
- To examine examples of futuristic smart cities under construction.

Methodology:
- Present Part I of the PPT: How Will AI Shape Future Smart Cities? (15 minutes)
- Open discussion (10 minutes)
- Part II of the PPT: AI Applications in Smart Cities (15 minutes)
- Open discussion (10 minutes)
- Watch the Video: Future Smart Cities planned by 2050 (10 minutes)
- Open discussion (10 minutes)
- General assessment: Matrix sorting & multiple choice exercises (20 minutes)

Sub-Topic 1: How will AI change the cities we live in?

Duration: 25 minutes

Content: This section will explore the transformative impact of AI on future urban landscapes. It will discuss how AI technologies can revolutionize transportation, energy management, public safety, and urban planning. Additionally, it will examine the potential benefits and challenges of integrating AI into city infrastructure.

Methodology
- Present Part I of the Presentation: How Will AI Shape Future Smart Cities? (15 minutes)
- Open discussion (10 minutes): after Part I of the presentation encourage students to share their thoughts and questions about the concepts covered. Examples of open-ended questions are available on Slide 9.

Material
- Internet Connection
- PPT Presentation: 3.5. AI as the new key elements in the future smart cities (Slide 1 to 9)

Sub-topic 2: AI applications in smart cities

Duration: 25 minutes

Content: This section will explore specific applications of AI in smart city environments, such as traffic management, public transportation, waste management, environmental monitoring, and public health initiatives.

Methodology
- Present Part II of the Presentation (Slide 10 to Slide 19): AI Applications in Smart Cities (15 minutes)
- Open discussion (10 minutes): after Part II of the presentation encourage students to share their thoughts and questions about the concepts covered. Examples of open-ended questions are available on Slide 17.

Material
- Internet Connection
- PPT Presentation: 3.5. AI as the new key elements in the future smart cities (Slide 10 to 19)

Sub-topic 3: Future smart cities planned by 2050.

Duration: 45 minutes

Content: This section will examine futuristic smart cities currently under construction worldwide. Students will watch a video showcasing innovative urban planning concepts and AI integration in city design. They will explore the features and technologies proposed for these future cities and consider their potential impact on urban living.

Methodology
- Watch the Video: Future Smart Cities planned by 2050 (10 minutes)
- Open discussion (10 minutes): after watching the video encourage students to share their thoughts and questions about the concepts covered in the video. Examples of open-ended questions that can be asked are:
  - What aspects of the future smart cities impressed you the most and why?
  - Which city did you like the most and why?
  - Would you like to live in a city like that?
- Quizz: Single, Matrix Sorting Choice and Open Question/Essay (20 minutes)

Material
- Internet Connection
- Quizz

Sub-topic 3: Future smart cities currently being built

Single Choice

1) AI-driven _____ systems detect anomalies and enhance public safety in urban environments.

a) transportation
b) surveillance
c) communication
d) irrigation

2) AI technologies optimize waste collection routes, increase _____ rates, and minimize landfill usage.

a) pollution
b) recycling
c) energy
d) consumption

3) Digital twins simulate urban environments and inform decision-making for sustainable _____ development.

a) rural
b) suburban
c) city
d) industrial

4) AI can be used within smart cities to analyze and track business and citizen energy usage, helping to implicate _____ sources of energy.

a) fossil
b) renewable
c) nuclear
d) geothermal

5) AI applications in healthcare enable early disease detection, optimize resource allocation, and promote proactive _____ management.

a) health
b) energy
c) waste
d) financial

Matrix Sorting Choice

Criterion	Sort elements
Energy consumption	Renewable energy optimization
Waste management	AI-driven waste collection routes
Public safety	AI-powered surveillance systems
Traffic congestion	Smart traffic lights
Urban planning	Automated public transportation
Environmental Monitoring	Weather forecasts

Essay/Open Answer

In envisioning your ideal future city, describe its key features and the role of AI within it. How would AI contribute to the city's functionality, sustainability, and overall quality of life?

There is a choice here for text box or Upload a Media File