



Sustainability Literacy Quiz

2021 - 2023

Authored by: HKUST Sustainability/ Net-Zero office,
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1 Introduction

Goal and Format

The Sustainability Literacy Quiz survey (total of 18 questions) was developed in 2021 to assess HKUST students' understanding of sustainability. The survey is designed to cover a wide range of sustainability topics (e.g. climate change basics, ESG issues, environmental management concepts etc.) while serving as an educational tool to spark student's interest in different areas. Refer to Figure 1 for examples of the quiz questions and answers, and Appendix 1 for full list of questions.

Figure 1: Screenshots of questions/answers in quiz

Question 1: The Urban Heat Island Effect is:

- The trend of people moving from rural areas moving to urban areas
- The increase in temperature in tropical urban areas caused by climate change
- An increase in the number of cities that reduce exports and imports during hot summer months
- A higher temperature in urban areas due to the density of buildings, the sparseness of greenery and other human activities.
- All of the above
- I don't know

Answer 1: Not quite!

The correct answer should be "A higher temperature in urban areas due to the density of buildings, the sparseness of greenery and other human activities."


The Urban Heat Island (UHI) effect is a common phenomenon where metropolitan areas are significantly warmer than surrounding rural areas. Densely populated areas are warmer for many reasons: there are more concrete buildings that absorb the heat; there are more cars, airconditioners, heaters and other equipment that create heat; and the density of buildings can slow down breezes and other natural air flows that can cool the areas naturally.

Question 2: In order to prevent the worst effects of global climate change, scientists recommend that we:

- Eliminate the emissions of greenhouse gases by 2050
- Emphasize the deployment of renewable energy resources
- Eat less meat and dairy
- Focus on increasing the efficiency of buildings and transportation systems
- All of the above
- I don't know

Answer 2: Correct!

Global climate change is often referred to as an "existential crisis," meaning that it has the potential to threaten our way of life. Because of the seriousness of the threat, scientists recommend that we do everything possible to reduce this threat, like reducing our energy consumption, switching from fossil fuels to renewable fuels, and reducing the amount of meat and dairy in our diets ([see here](#) how meat and dairy are contributing to climate change).

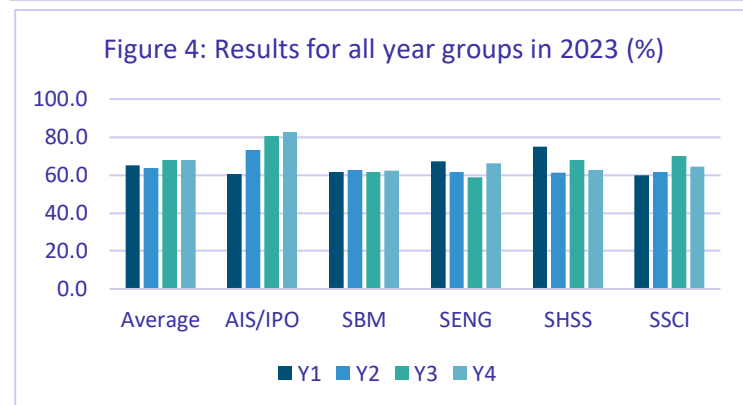
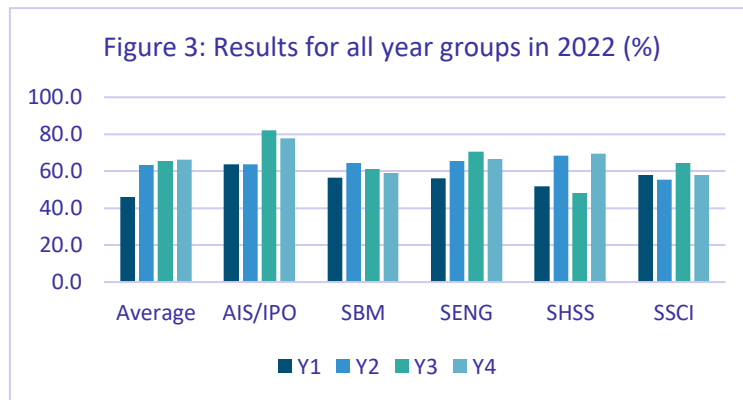
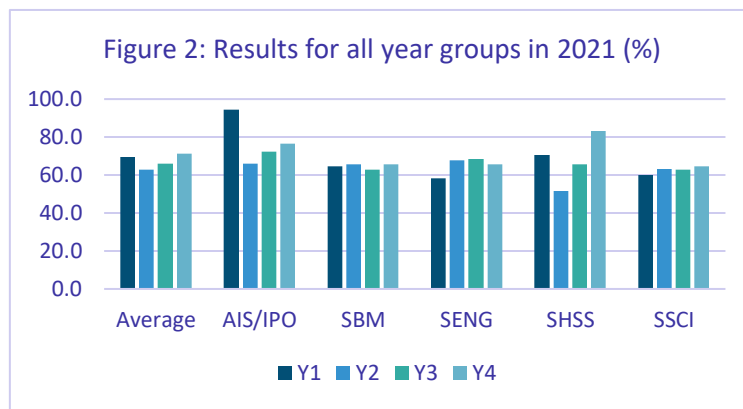


2 Results and Analysis

2.1 By School/Year Group

With the Sustainability Literacy Quiz results collected over 3 years (Figures 2-4; test results in Appendix 2), the following key trends are observed:

- Students in School of Science and Business and Management have lower average scores, while Academy of Interdisciplinary Studies (formerly known as Interdisciplinary Programs Office) students consistently register higher scores.
- On average, the Year 4 students score better than other year groups.



2.2 By Student cohort

When analyzing results of individual student cohort over the years data was collected, the following trends are observed:

- Students from the class of 2023 and the class of 2025 showed a year-on-year improvement of quiz results.
- The class of 2024 registered a lowered average test result over the years.

Table 1: Longitudinal results for class of 2025 (total score:18)

Data from 2022-2023	Average	AIS/IPO	SBM	SENG	SHSS	SSCI
Year 1	8.3	11.5	10.2	10.1	9.3	0.4
Year 2	11.5	13.2	11.3	11.1	11.0	11.1
Year 3	Data to be collected in 2024					
Year 4	Data to be collected in 2025					

Table 2: Longitudinal results for class of 2024 (total score:18)

Data from 2021-2023	Average	AIS/IPO	SBM	SENG	SHSS	SSCI
Year 1	12.5	17	11.6	10.5	12.7	10.8
Year 2	11.4	11.5	11.6	11.8	12.3	10
Year 3	12.2	14.5	11.1	10.6	12.2	12.6
Year 4	Data to be collected in 2024					

Table 3: Longitudinal results for class of 2023 (total score:18)

Data from 2021-2023	Average	AIS/IPO	SBM	SENG	SHSS	SSCI
Year 1	Data collection only started in 2021					
Year 2	11.3	11.9	11.8	12.2	9.3	11.4
Year 3	11.8	14.8	11	12.7	8.7	11.6
Year 4	12.2	14.9	11.2	11.9	11.3	11.6

Table 4: Longitudinal results for class of 2022 (total score:18)

Data from 2021-2022	Average	AIS/IPO	SBM	SENG	SHSS	SSCI
Year 1	Data collection only started in 2021					
Year 2	Data collection only started in 2021					
Year 3	11.9	13	11.3	12.3	11.8	11.3
Year 4	11.9	14	10.6	12	12.5	10.4

3 Conclusion and Recommendations

With the goal of raising overall sustainability literacy amongst our students, the following recommendations are proposed.

3.1 Increase awareness of various sustainability topics

A wide range of sustainability topics were assessed in the Sustainability Literacy Quiz and across all schools/years, these 3 specific areas - UN Sustainability Development Goals, HK 2030 Decarbonization Strategy and Futures-thinking concept – were least understood by students. When organizing related activities, classes or programs on campus, organizers/staff are encouraged to provide further elaboration or highlight relevant links to emphasize the key ideas of these topics.

3.2 Focused engagement of students in different schools/year groups

More effort to raise sustainability awareness can be directed towards students in Year 1 and Year 2, and in the schools of Science and Business and Management.

For the class of 2024, before they graduate next year, the students in the School of Business and management and School of Engineering can be more purposefully introduced to sustainability-related content or discussions through relevant teaching or student-activity channels.

List of quiz questions and answers

<p>What is the difference between a Living Wage and a Statutory Minimum Wage?</p> <p>They are the same thing</p> <p>The statutory minimum wage is always higher</p> <p>The living wage reflects the actual amount of income needed to meet basic needs</p> <p>The living wage is a legally binding regulation</p> <p>I don't know</p>	<p>"Futures thinking" is an important concept in sustainability. Which of the following is NOT considered a "Futures Thinking" exercise?</p> <p>Scenario planning</p> <p>Payback analysis</p> <p>Forecasting and back-casting</p> <p>Life cycle cost analysis</p> <p>I don't know</p>	<p>Which of the following is NOT an example of a Polluter Pays Principle-based policy?</p> <p>Municipal Solid Waste (MSW) charging</p> <p>Incentive schemes for bringing your own bottle</p> <p>Deposit fee for bottles</p> <p>Carbon Tax</p> <p>All of the above</p> <p>I don't know</p>	<p>What statement is NOT true about the UN's Sustainable Development Goals (SDGs) initiative?</p> <p>It was adopted by all of the UN member states</p> <p>It recognizes that eradicating poverty is the greatest global challenge and a key to healing our planet</p> <p>It aims to ensure that all human beings can enjoy prosperous and fulfilling lives</p> <p>It is in direct competition with the Millennium Development Goals</p> <p>I don't know</p>
<p>The Urban Heat Island Effect is:</p> <p>The trend of people moving from rural areas moving to urban areas</p> <p>The increase in temperature in tropical urban areas caused by climate change</p> <p>An increase in the number of cities that reduce exports and imports during hot summer months</p> <p>A higher of temperature in urban areas due to the density of buildings, the sparseness of greenery and other human activities.</p> <p>All of the above</p> <p>I don't know</p>	<p>In order to prevent the worst effects of global climate change, scientists recommend that we:</p> <p>Eliminate the emissions of greenhouse gases by 2050</p> <p>Emphasize the deployment of renewable energy resources</p> <p>Eat less meat and dairy</p> <p>Focus on increasing the efficiency of buildings and transportation systems</p> <p>All of the above</p> <p>I don't know</p>	<p>According to Hong Kong Smart City Blueprint, which of the following is NOT an initiative to reduce carbon emissions?</p> <p>Changing the electricity fuel mix to reduce the use of coal</p> <p>Establishing bicycle-friendly new town</p> <p>Introduction of scooters as micro-mobility option</p> <p>Charging scheme on Municipal Solid Waste</p> <p>I don't know</p>	<p>Which of the following is NOT a characteristic of a circular economy?</p> <p>Closed-loop system</p> <p>Waste are regenerated into raw materials</p> <p>Extra costs for manufacturers</p> <p>Minimizing the use of resource inputs</p> <p>I don't know</p>
<p>A technique to assess environmental impacts associated with all the stages of a product's life from cradle to grave (resource extraction through usage and disposal), is called:</p> <p>An annual review</p> <p>A life cycle analysis</p> <p>An energy audit</p> <p>A system analysis</p> <p>I don't know</p>	<p>Environmental, Social Governance (ESG) reporting is now required by companies listed on the Hang Seng Stock Exchange. What is an example of a topic included in a typical ESG report?</p> <p>Labor practices</p> <p>Greenhouse gas inventory</p> <p>Community service</p> <p>Performance data and KPIs</p> <p>All of the above</p> <p>I don't know</p>	<p>Which of the following are principles of systems thinking?</p> <p>It views individual elements within a larger, more complex system</p> <p>It addresses problems in a way that does not create new problems in the future</p> <p>It considers the impact and consequences of actions over time</p> <p>It allows us to understand how our actions are influenced by something else</p> <p>All of the above</p> <p>I don't know</p>	<p>"Living within our planetary boundaries" means:</p> <p>Using natural resources as slowly as possible</p> <p>Using only as much resources as can be replaced by natural processes</p> <p>No introducing new technology too quickly</p> <p>Discovering new resources to allow maximum economic growth</p> <p>I don't know</p>
<p>Which of the following is NOT a stage in life-cycle analysis?</p> <p>Disposal</p> <p>Habitat Conservation</p> <p>Product Use</p> <p>Raw Material Production</p> <p>I don't know</p>	<p>The Human Development Index (HDI) was developed as an alternative to use economic growth as a measurement of the health and development of a country. Which of the following is NOT included in the HDI?</p> <p>Life expectancy</p> <p>CO₂ Emissions</p> <p>Literacy Rate</p> <p>GDP per capita</p> <p>I don't know</p>	<p>Which of the following statements about greenhouse gases is FALSE?</p> <p>Humans would be better off without greenhouse gases</p> <p>Greenhouse gases trap part of the heat from escaping back into space</p> <p>Without fossil fuels, the concentration of greenhouse gases would be largely constant within the atmosphere</p> <p>There are several other greenhouse gases in addition to carbon dioxide</p> <p>All of the above are TRUE</p> <p>I don't know</p>	<p>According to Hong Kong 2030 Decarbonisation Strategy, which of the following is estimated to make up the highest percentage of Hong Kong power generation in 2030?</p> <p>Coal</p> <p>Solar</p> <p>Natural Gas</p> <p>Nuclear</p> <p>I don't know</p>

<p>Which is NOT an accurate goal of the "Fair Trade" movement?</p> <p>To guarantee local producers a fair, stable price for products like coffee, chocolate, and handicrafts</p> <p>To develop longer-term trading relationships between local suppliers and wholesalers</p> <p>To designate a recognizable brand to help consumers make more sustainable choices</p> <p>To maximize the consumption of local natural resources</p> <p>I don't know</p>	<p>When adopted in 1948, The Universal Declaration of Human Rights was considered a great achievement because:</p> <p>For the first time in history, it identified a set of fundamental human rights to be universally protected</p> <p>It declared that all human beings are born free and equal in dignity and rights</p> <p>It expressed that everyone has the right to express their opinions freely and without interference</p> <p>The articles have formed the foundation for numerous international treaties and national constitutions</p> <p>I don't know</p>		
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Score results for Sustainability Literacy Quiz (2021-2023)

Table 5: Results for all year groups in 2021

2021	Average	AIS/IPO	SBM	SENG	SHSS	SSCI
Year 1	12.5	17	11.6	10.5	12.7	10.8
Year 2	11.3	11.9	11.8	12.2	9.3	11.4
Year 3	11.9	13	11.3	12.3	11.8	11.3
Year 4	12.8	13.8	11.8	11.8	15	11.6
Count: 304	12.1	13.9	11.6	11.7	12.2	11.3

Table 6: Results for all year groups in 2022

2022	Average	AIS/IPO	SBM	SENG	SHSS	SSCI
Year 1	8.3	11.5	10.2	10.1	9.3	0.4
Year 2	11.4	11.5	11.6	11.8	12.3	10
Year 3	11.8	14.8	11	12.7	8.7	11.6
Year 4	11.9	14	10.6	12	12.5	10.4
Count: 302	10.9	13.0	10.9	11.7	10.7	8.1

Table 7: Results for all year groups in 2023

2023	Average	AIS/IPO	SBM	SENG	SHSS	SSCI
Year 1	11.7	10.9	11.1	12.1	13.5	10.8
Year 2	11.5	13.2	11.3	11.1	11.0	11.1
Year 3	12.2	14.5	11.1	10.6	12.2	12.6
Year 4	12.2	14.9	11.2	11.9	11.3	11.6
Count: 258	11.9	13.4	11.1	11.4	12.0	11.5