

Teaching sustainability at the United States Coast Guard Academy: An overview of a newly created elective focusing on environmental and social justice.

John Lewis, University of Maryland Global Campus

Yang Xu, U.S. Coast Guard Academy

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"Transforming Business Education & Practice, 2020" Oct. 26-29, 2020

High-impact Low-tech Pedagogies to Engage Students

Yang Xu, Ph.D. yang.xu@uscga.edu
U.S. Coast Guard Academy



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Impact of Instructional Dimension on Student Achievement

- Please rank the following dimensions:
 - Teacher's stimulation of interest in the course and its subject matter
 - Teacher's preparation; Organization of the course
 - Clarity and understandability
 - Teacher's elocutionary skills
 - Teacher communicates relevance/impact of instruction
 - Teacher's encouragement of questions, discussion, and opinions
 - Teacher's availability and helpfulness
 - Instructor meets course objectives
 - Teacher's overall rating
 - Motivates high standard of performance



Study results

1. Teacher's preparation; Organization of the course
2. Clarity and understandability
3. Instructor meets course objectives
4. Teacher communicates relevance/impact of instruction
5. Teacher's overall rating
6. Motivates high standard of performance
6. Teacher's stimulation of interest in the course and its subject matter
8. Teacher's availability and helpfulness
8. Teacher's encouragement of questions, discussion, and opinions
10. Teacher's elocutionary skills

Source: Kenneth A. Feldman, "The Association between Student Ratings of Specific Instructional Dimensions and Student Achievement: Refining and Extending the Synthesis of Data from Multi-section Validity Studies," *Research in Higher Education*, Vol. 30, No. 6, 1989, pp. 583-645.



1. Start the class with something concrete and then go to the abstract subject matter

- Use a hook (<https://www.youtube.com/watch?v=W9FIjt7T5tg>) to stimulate students' interest in the topic area

The negligence of a team member caused a product defect in the manufacturing process. Who should be responsible for this mistake in your culture?

- A. That particular person causing the defect by negligence is the one responsible.
- B. The entire team should take the responsibility.



2. Relate the topic to the business practice and professional career

- [WSJ weekly reviews](#)
- Career portfolio



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3. Use guided notes to organize every class session

- Topics

Relationships and rules

The group and the individual

How far we get involved

- Readings

Chapters 4, 5 & 7

- Key Concepts

Universalism vs. Particularism

Individualism vs. Communitarianism

Which community?

Specific culture vs. diffuse culture

U-type vs. G-type

The danger zone

Implications

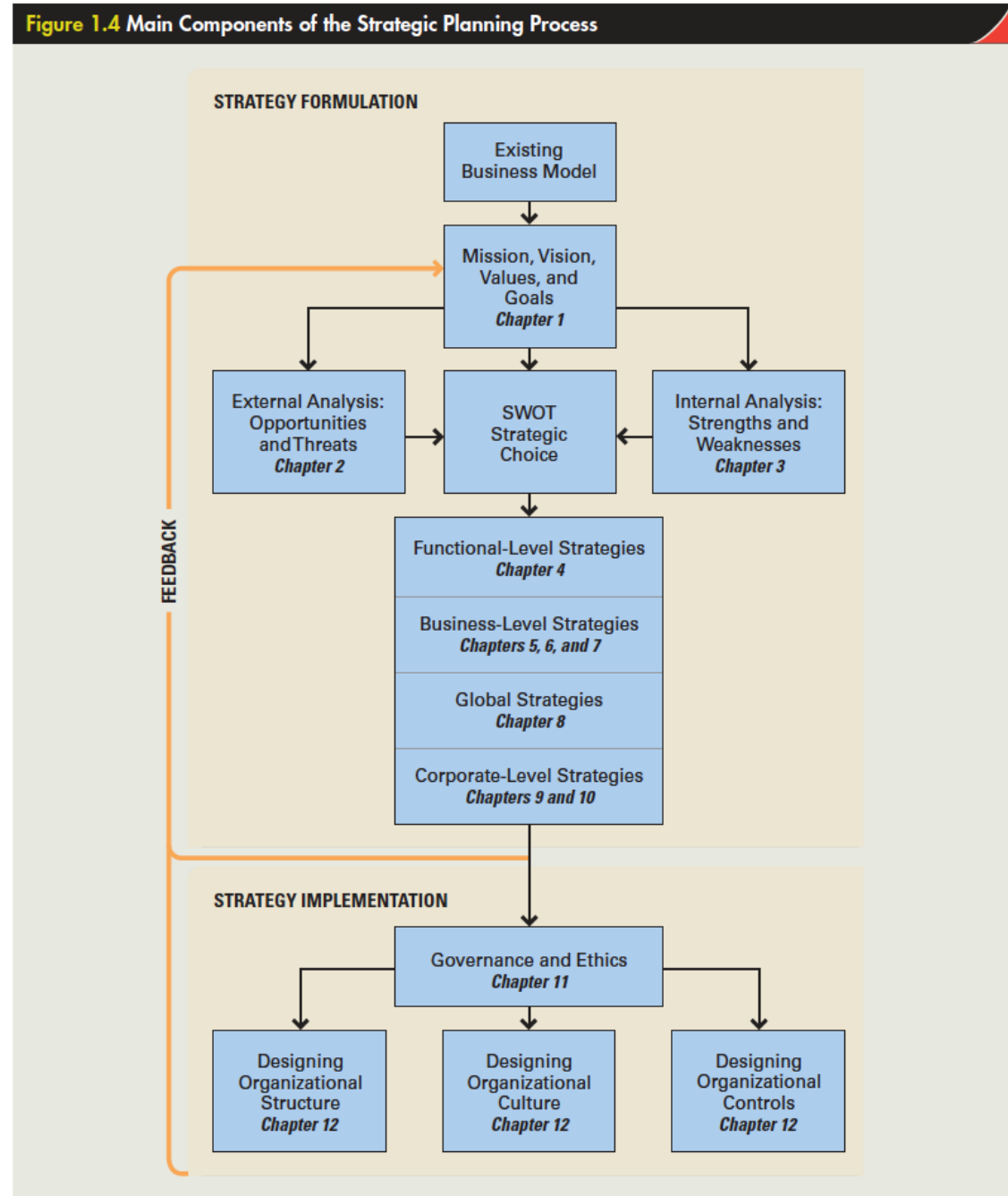


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4. Summarize the topic using diagrams connecting concepts and models

Figure 1.4 Main Components of the Strategic Planning Process



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MGT 8450 - 101
SUSTAINABILITY: Environmental and Social Responsibility
Spring 2020

John K. Lewis, D.M.; J.D.
University of Maryland Global Campus
john.lewis@faculty.umgc.edu.



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Course Description



- Creating and maximizing long-term economic, social and environmental value.
- Stakeholder groups affected by the decisions of the organization.
- Transformation to a green and sustainable economy.
- The case for organizations to become more sustainable is increasingly clear, requiring proactive and more holistic strategic thinking by their leaders.



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Course Objectives

- ✓ Understand the Environmental, Social, and Economic drivers and risks
- ✓ Enhance Your Critical Thinking Skills – Look deeper at an organization's sustainability claims – greenwashing?
- ✓ Develop Your Communication Effectiveness – Create quality written communications and strong professional presentations.
- ✓ Develop Your Career Potential – Become an effective leader and change agent in the Coast Guard
- ✓ Understand how to conduct a comparative analysis of an organization's sustainability practices.



Learning Objectives

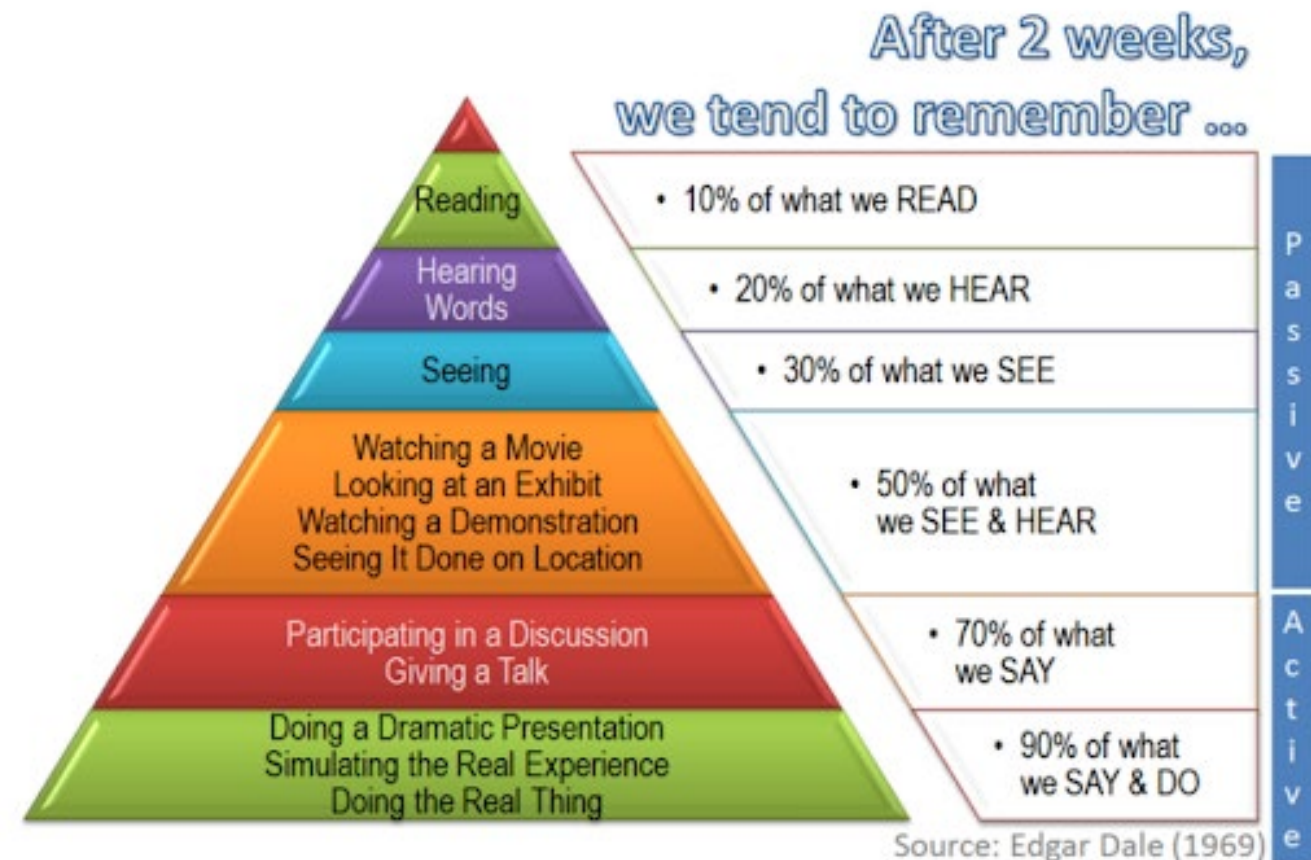


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Course Format

- Lectures
- Discussions
- Exercises
 - Videos
- Power-point presentations
- Case studies
- Guest lectures
 - Site visits

The Cone of Learning



Source: Edgar Dale (1969)

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Course Assignments



- Exercises
- Class Participation: Participation in class discussions and assignments conducted in class and outside class.
- Sustainability Presentation: Group presentation on an assigned area of sustainability.
- Research Paper: Team (2-3 members) create 10-15 page research paper on a topic related to sustainability or the green economy.



Course Topics

- Triple Bottom Line
- Sustainability Standards and Certifications
 - Corporate Sustainability Reporting
 - Greenwashing
- Carroll's Corporate Social Performance model
 - Stages of Corporate Citizenship
 - Stakeholder Analysis
 - Stakeholder Approaches
 - Life Cycle Assessment
 - Ethical Consumerism
 - Carbon Footprint
 - Consumer Purchasing Power
 - Factory Farming
 - Sustainable Meat
 - Laboratory Meat
 - Organic Farming



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Course Topics

- Green energy
- Green transportation
 - Green building
- Green technologies
- Clean drinking water
 - Bottled water
 - Deforestation
 - Wetlands loss
- Sustainable seafood
 - Overfishing
 - Fish farming
- Rising sea levels
 - Climate change
 - Homesteading
- Living off the grid

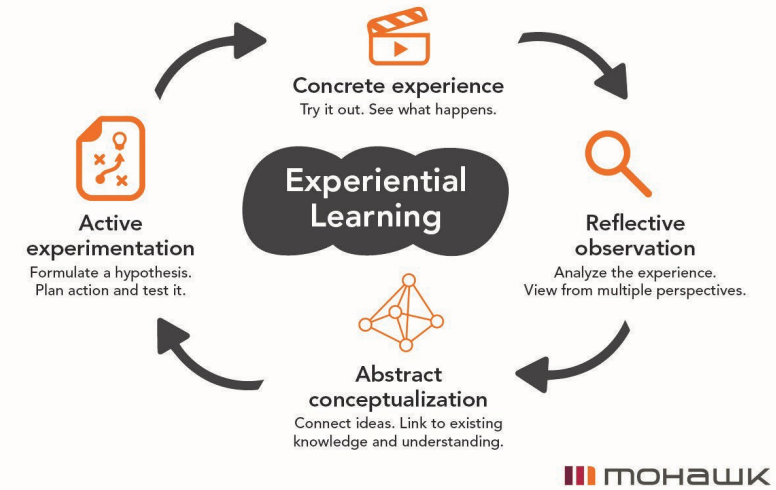


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Course Focus

- **Experiential Learning**

- Hands on assignments inside and outside class
- Student presentations on in-depth sustainability topic
- Field trip to Newport, RI to visit sustainable organizations
- Guest lecturers working with sustainability
- In-depth research paper – deep dive into narrow topic area (team project)



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Assignment One - Product Review

- Analyze the sustainability/green claims of the product. Things to consider when conducting your analysis:
 1. Name of product
 2. Design of product (Suggests green/environmentally friendly?)
 3. Product description (Words used/What is it supposed to do?)
 4. Ingredient List
 - a. Natural Ingredients
 - b. Chemicals
 - c. Toxicity
 - d. Possible Carcinogen?
 5. Cautions/Warnings
 6. Directions for use
 7. Claims made
 8. Certifications/Marks/Seals
 9. Manufacturer
 10. Reputation of Manufacturer
 11. Location of production
 12. Recycling instructions
 13. Associated website or phone number for information



Assignment Two - Carbon Footprint

Calculate your carbon footprint using **at least TWO** of the following calculators.

- <http://www.nature.org/greenliving/carboncalculator/index.htm>
- <https://www3.epa.gov/carbon-footprint-calculator/>
- <http://footprint.stanford.edu/calculate.html> (Use the advanced calculator)
- <https://www.conservation.org/carbon-footprint-calculator#/>
- <https://offset.climateneutralnow.org/footprintcalc>
- <https://coolclimate.berkeley.edu/calculator>

Keep track of:

- Which calculator you used
- Your footprint results (if possible print out your results attach them to your summary)

Write a brief summary of your results. Focus on:

- Which calculators did you use? (incorporate information from step 2)
- What was your footprint?
- What is the total amount of CO₂ released by your:
 - transportation? _____
 - food? _____
 - purchases? _____
- Were there any significant differences in your results between calculators?
- As a result of this information are you considering any small or large behavior modifications to alter your footprint?
- In comparison to other countries most U.S. citizens have a large carbon footprint. Does this information change your answer toward modification of your CF behaviors?



Assignment Four - New Vehicle Purchase

- Decide whether to purchase an electric vehicle (EV) or a standard internal combustion engine (ICE) vehicle.
- Select a standard ICE 2020 vehicle to purchase.
- Select an EV to purchase.
- Calculate your return on investment (ROI).
- Things to consider purchase price, cost to operate, repairs, insurance, depreciation, tax subsidies, charging station installations, carbon emissions, etc.
- You should use an 8-year life span for these calculations.
- Here are some websites that will help you with these calculations:
 - <https://www.energysage.com/electric-vehicles/advantages-of-evs/do-electric-cars-save-money/>
 - <https://www.energy.gov/articles/egallon-what-it-and-why-it-s-important>
 - <https://afdc.energy.gov/vehicles/how-do-all-electric-cars-work>
 - <https://evcharging.enelx.com/news/blog/570-electric-cars-vs-gas-cars-cost>
 - https://afdc.energy.gov/vehicles/electric_emissions.html#wheel
 - <https://www.edmunds.com/fuel-economy/the-true-cost-of-powering-an-electric-car.html>
 - <https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle>
 - <https://www.energy.gov/eere/electricvehicles/saving-fuel-and-vehicle-costs>



Sustainability Team Research Presentation

- Oral report using Microsoft PowerPoint on their chosen topic.
- Group project with teams of 2-3 students.
- 20 to 30 minute oral presentation
- Graded on presentation skills and content of the presentation.
- The group received one grade.
- For the 20 to 30 minute block of your presentation you will be leading the class discussion on this aspect of sustainability try to make it both interesting and informative!
- Switched to narrated PowerPoints which were uploaded to Learning Management System (Moodle)



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Experiential Visits

- [Newport Biodiesel](#)
- [Clean Ocean Access](#)
- [Patagonia](#)
- [Resails](#)
- [Rhode Side Revival](#)

THE BENEFITS OF EXPERIENTIAL LEARNING



DEEPER
INSIGHTS



LONG-LASTING
LEARNING



Guest Lecturer

- Megan O'Connell
 - Project Manager with Skanska USA Building Inc.
 - Living Future Accredited
 - LEED AP Green Business Certification
- Discussed Green Building requirements with students



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Research Paper Topics

- Off the Grid living
- Homesteading
- Sustainable Seafood in Micronesia
- Solar Power
- Wind Energy
- Wave Energy
- Electric Vehicle Purchase Considerations



Lessons Learned

- Easy to move class to online format except for site visits
- Stay on top of Research Paper
- Textbook?
- Elective - Very popular class
- 50 minute class session not ideal



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Questions?



ANY
QUESTIONS?



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