# Homework #2

Finish this assignment before the beginning of next lecture on March 7th.

1. **Read the book “Science Research Writing” by Glasman-Deal through page 71.**

Try the in-book exercises by yourself before looking at the answers:

Exercise 4, p.45; compare with your group exercise from last lecture.

Note that there is one page missing from your reading; we will cover this next class.

1. **Do Exercise 5 on page 69.**

* Write the introduction of a research article titled “A cover for the single-person pedal-powered vehicle”.
* Use 250-350 words.
* Follow the generic introduction model, including all four components of the model.
* Use verb tense changes, plus transition words and other vocabulary from Chapter 1.
* Make up fake citations and include them in your introduction (authors, year, title; include a short bibliography section).

Submit this task by emailing your article introduction to the TA and cc the Professor.

single-person pedal-powered vehicle

Sustainable transportation is considered to be the most important issue in regard to urban development and environmental protection (Smith & Johnson, 2020). As cities grow and environmental concerns become more pressing, the need for innovative and eco-friendly transportation solutions has never been greater. Pedal-powered vehicles, owing to their zero carbon emissions and health benefits, have become a popular choice for short-distance travel within urban areas (Davis & Thompson, 2018). This popularity has sparked a promising interest in enhancing the utility and functionality of such vehicles.

Numerous studies have examined the efficiency, design, and environmental impact of pedal-powered vehicles (Lee, Kim, & Park, 2019). Recently, focus has shifted to improving the user experience through design innovations that protect riders from weather elements, enhance safety, and improve vehicle aesthetics (Wang et al., 2021). Much effort has been devoted to developing accessories like lighting and storage solutions; however, one area that remains underexplored is the development of covers for single-person pedal-powered vehicles (Gupta & Chandra, 2022).

So far, the existing solutions for vehicle covers have been either too cumbersome, not sufficiently weatherproof, or lack aerodynamic design, which significantly affects the overall efficiency and appeal of pedal-powered vehicles (Gupta & Chandra, 2022). However, one attractive possibility for addressing these issues is the design of a lightweight, durable, and aerodynamic cover that can be easily integrated into existing pedal-powered vehicles.

In this paper, we introduce a novel design for a cover specifically tailored for single-person pedal-powered vehicles. Our design focuses on maximizing aerodynamic efficiency, ensuring weather resistance, and providing an aesthetically pleasing appearance. We begin by reviewing the current state of pedal-powered vehicle enhancements, identifying the gap in research related to vehicle covers. Following this, we detail our methodology for designing the cover, including materials used, structural analysis, and prototype testing. The results section presents the performance of our cover in various weather conditions and its impact on the vehicle's efficiency. Finally, we discuss the implications of our design for future developments in pedal-powered transportation solutions.

Bibliography

Davis, A., & Thompson, R. (2018). Eco-friendly urban transportation: The rise of pedal power. Green City Press.

Gupta, S., & Chandra, A. (2022). Challenges in the design of accessories for pedal-powered vehicles. Journal of Sustainable Mobility, 4(2), 112-127.

Lee, S., Kim, J., & Park, S. (2019). Evaluating the environmental impact of pedal-powered vehicles in urban areas. Environmental Science & Technology, 53(7), 3942-3950.

Smith, L., & Johnson, M. (2020). Sustainable transportation in modern cities. Urban Planning Review, 11(1), 45-59.

Wang, Y., Zhou, L., Zhang, X., Liu, X., & Wei, H. (2021). Innovative design solutions for enhancing the user experience of pedal-powered vehicles. Design Studies, 15(3), 349-367.