

Green Products: Graduation Gown Buying vs. Renting

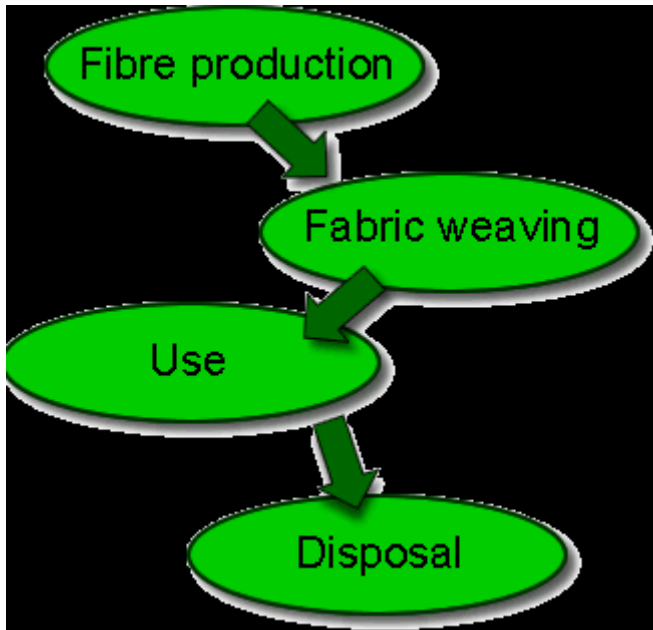
“Today—as we contemplate our environmental prospects—this is no joke. Future generations will face an increasingly grim tomorrow ... unless we get smarter today about treating our environment with greater care. We do not have to rewire human nature in order to help our planet heal itself before it is too late. Graduates: You have already set the healing process in motion. With passion and intelligence you have raised your collective voices, and Penn is taking the environmental high road toward fostering a sustainable future. We are cutting energy usage during peak hours by nearly 20 percent. We are purchasing 30 percent of our energy from wind-generated power, making Penn one of the largest private purchasers of wind power in the nation. We also are a national campus leader in the adaptive reuse of existing buildings and materials. Earlier this year, we signed an historic higher education pact to develop a comprehensive sustainability plan by 2009. We must and we will continue to do much more to help save our planet.”

-Penn Commencement Address by President Amy Gutmann, Monday, May 14, 2007.

It is somewhat ironic that this speech was delivered to an audience of 5000 graduates who, due to Penn’s design, had bought 5000 graduation caps and gowns for a one-time ceremony. Despite the admittedly impressive measures that Penn has taken to mitigate its environmental impact, it failed to be sustainable in one important aspect of its existence: graduation. This paper will compare the process of buying graduation caps and gowns to more sustainable options. These options include renting and donating. The comparison is comprised of a life cycle analysis of cap and gown production, an economic feasibility analysis of a rental program, and a case study of donation.

Penn’s graduation ceremony produces an immense amount of waste every year because the school currently feels that the environmental impact of 5000 one-time-use polyester gowns is not worth the cost of washing and storing them. The office in charge of planning the commencement ceremony was quick to reject the idea of any sort of Penn-funded rental program, claiming that such a program would be costly, time consuming, and generally inconvenient for Penn to handle on its own. Despite my drawn out argument about the life cycle analysis of polyester gowns, having the graduates individually pay \$60 for two days of commencement seems like a better option. This may be true financially, but the material and water waste and CO₂ released may tell a different story.

Polyester Life Cycle



<http://www.sustainability-ed.org/pages/example4-3.htm>

As shown above, there are four main stages that a polyester graduation gown goes through during its life cycle. First, the fiber must be produced and made ready for weaving. The fiber is transferred from its production spot to the factory where it is turned into a graduation gown. It is then shipped to the retail facility where students buy it, wear it for two hours, and then throw it into the trash or store it at home. The disposed gowns are then sent to landfills where they take many decades to decompose.

So how much waste really occurs as a result of buying and disposing of gowns? The following is a quantitative life cycle analysis of this wasteful process.

LIFE CYCLE ANALYSIS

The caps and gowns are made out of polyester. This measurement assumes they are used once and never used again. The measurements below were made for 1 KG of polyester. A graduation cap and gown weighs approximately 500g, so the measurements have been adjusted accordingly.

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Polyester Fiber Production (1 KG)

Energy (MJ) = 97 MJ > 24.25 MJ

Water (L) = 17 L > 4.25 L

Carbon Dioxide Emissions = 2.3kg > 0.575 kg

Polyester Fabric Weaving (1 KG)

Energy (MJ) = 33 MJ > 8.25 MJ

Water (L) = 1,291 L > 322.75 L

Carbon Dioxide Emissions = 1.5kg > 0.375 kg

Use (Assuming used once, no washing)

Disposal (1 KG)

Incineration = 33 MJ > 8.25 MJ

Landfill Biodegradable = No

Recycled = Currently not being recycled

<http://www.sustainability-ed.org/pages/example4-3.htm>

Evidently, there is an immense amount of water and material waste and CO₂ emissions that result from one gown being made and disposed of; this doesn't even take into account the waste, energy, water, and CO₂ resulting from shipping the material around. Not only does this happen year after year, but it happens worldwide on the scale of millions of graduates. Put into perspective, this is the approximate amount of waste specific to Penn's total graduating class:

- TOTAL ENERGY = 203,750 MJ
- TOTAL WATER = 1,635,000 L
- TOTAL CO₂ RELEASED = 4,750 KG

Clearly, this is an immense amount of waste due to Penn's reluctance to take on the admittedly difficult task of collecting and redistributing the gowns year after year. I spoke with Julia Ledwell, Special Events Manager for the Office of the President, who was adamant about the office's desire to not implement a rental service; the commencement ceremony planning apparently is too hectic as it is. From a fiscal standpoint, it makes sense to have the students buy their own caps and gowns. Penn doesn't spend a dime on

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student graduation apparel and are not burdened with the responsibility of collecting, organizing, washing, measuring, and redistributing them. In addition, it is in the students' best interest to buy his or her cap and gown. After spending hundreds of thousands of dollars on tuition, it only makes sense to spend an extra \$60 on commencement. It is difficult to use caps and gowns from high school ceremonies because Penn's gowns are specific to Penn and the particular school from which a student is graduating. Although the rental program is deemed too difficult to implement, other schools have been successfully running gown rental programs for a long time. Below is UC Davis' price chart for cap and gown rentals:

Cap & Gown Rental Costs

	Online Early-Bird Oct 1 - Oct 16	Online after Grad Faire Oct 17 - Dec 8	During Pickup Dec 9 - Dec 9	Late Rental after Dec 9
Bachelor cap, gown & tassel	\$30.00	\$35.00	\$40.00	\$50.00
Tassel only (purchase)	\$5.00	\$5.00	\$5.00	\$5.00
Cap only (purchase)	\$10.00	\$10.00	\$10.00	\$10.00
Late pickup fee for <i>pre-orders</i>				\$10.00

http://bookstore.ucdavis.edu/graduation/cap_gowns.cfm

Obviously, it is nowhere near impossible to begin a rental program: just inconvenient and time-consuming. The people who have the ability to begin such a program are also the people who would be responsible for financing and executing its operations. Thus, when it comes to Penn's bottom line, saving cash and time is paramount to environmental concerns.

An option that would be environmentally friendly, cost effective, and easy to implement is a donation system. For example, Carolyn Loeb of Macalester College developed a system for Macalester graduates to donate their graduation gowns to the Minnesota Internship Charter High School. She contacted a low income school that she had interned with and offered gowns from Macalester. She then organized the effort to collect, size, box and donate 130 graduation gowns and 109 caps from Macalester graduates, approximately 1/3 of the gowns worn at graduation. (Macalester News).

This sort of system could easily be set up at Penn and would help distribute gowns among underprivileged schools in the Philadelphia area. Many Penn graduates

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admitted to either throwing out or storing their caps and gowns somewhere in their house, never to be used again. Technically, this won't actually be economically better for Penn, but it will save immense material costs because the local middle and high schools won't have to buy their own gowns. In addition, this would be excellent public relations material for Penn. Once these gowns are donated, the high school can reuse them as well. This will save the high schools and middle schools money that is better spent on other areas of education instead of lots of one-time-use polyester. Gowns can also be passed on through E-bay and Craig's list, whether for free or for a small fee.

The Caps and Gowns issue at Penn is a smaller example of a larger problem in the world: the bottom line vs. environmental ethics. As we increasingly ravage ecosystems for natural resources, it is becoming increasingly crucial for us to include environmental standards into our accounting practices. Contrary to classical economic theory, our planet's resources are very much limited and we are depleting them at a frightening rate. By improving our practices and taking into account the consequences of our actions, we can start to make incremental improvements to the way we live.

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