Producing More Energy In Upper Lasell Fitness Center

Figure 1 Lasell Fitness Center on Spring Street. (http://www.campusexplorer.com/colleges/816BCE33/Massachusetts/Williamstown/Williams-College/photos-videos/)

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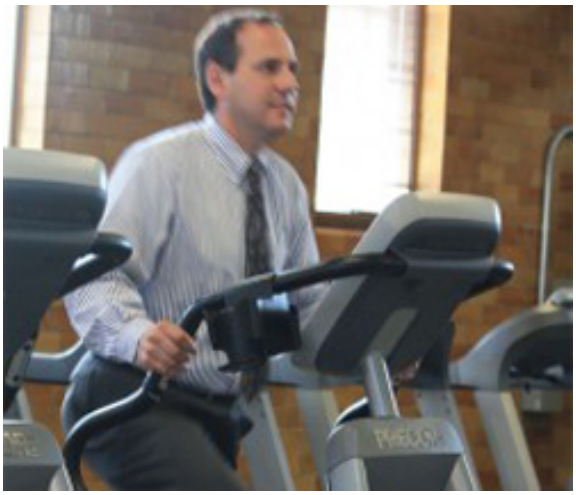

Figure 2: President Adam Falk on an energy producing elliptical. (http://athletics.williams.edu/sports/General_News_Items/080510_Lasell_Gym-_They_don-t_make_them_like_they_used_to)

Introduction

Lasell Gym Fitness Center currently has 18 elliptical machines that were retrofitted by ReRev about 4 years ago in order for individuals on the machines to produce electricity for the college through their workouts. ReRev, the company Williams worked with, retrofits gym equipment to convert otherwise wasted human energy into renewable energy for electricity use. The kinetic energy used during an individual's workout is converted from Direct Current (DC) into Alternating Current (AC) in order for it to be used as electricity.

To this day, around 14,000 kWh have been produced from the machines. The main concern now is how to use produce more energy with the system that is already put in place. The focus of this paper will be on how to better advertise the program so that gym goers are not only more aware of it but are also encouraged to want to use the power producing machines.

Upper Lasell Fitness Center

Lasell Gym is frequented by students, staff, faculty and Williamstown community members. Although there are different facilities, such as the pool, the lower and the upper Lasell fitness center, for the purposes of this paper, the focus will remain on upper Lasell which is where the cardio machines are located. The hours of operation as specified on the website are: Monday, Wednesday, Friday from 6:00 a.m. until 9:00 p.m.; Tuesday and Thursday from 6:00 a.m. until 9:30 p.m.; Saturday from 10:00 a.m. until 9:00 p.m. and Sunday from 1:00 p.m. until 9:30 p.m.

Methodology

Most of this paper relies on textual research which provides information on the companies spoken about and how the suggested systems work. However, there was some observation of people's workouts in the gym to collect data on the average amount of energy produced by them. In addition, to get an idea of how many people knew about the already implemented energy producing machines in the gym and how knowledgeable they were about it, a survey was conducted. The survey was sent to 20 people with the following questions:

Name: Year: How often do you go to the gym?:
Did you know that there are energy producing machines in the gym?
If so, how did you find out?
Did you know that it is only the elliptical machines that have the capability of converting the energy you use in your workouts into electricity?
Does knowing this make you more likely to use the elliptical machines over the others?

Fifteen people answered the survey. Despite the information the survey collected, the last part of it is not as useful in predicting behavior. What people say they intend to do and what they actually do doesn't always correlate.

Data

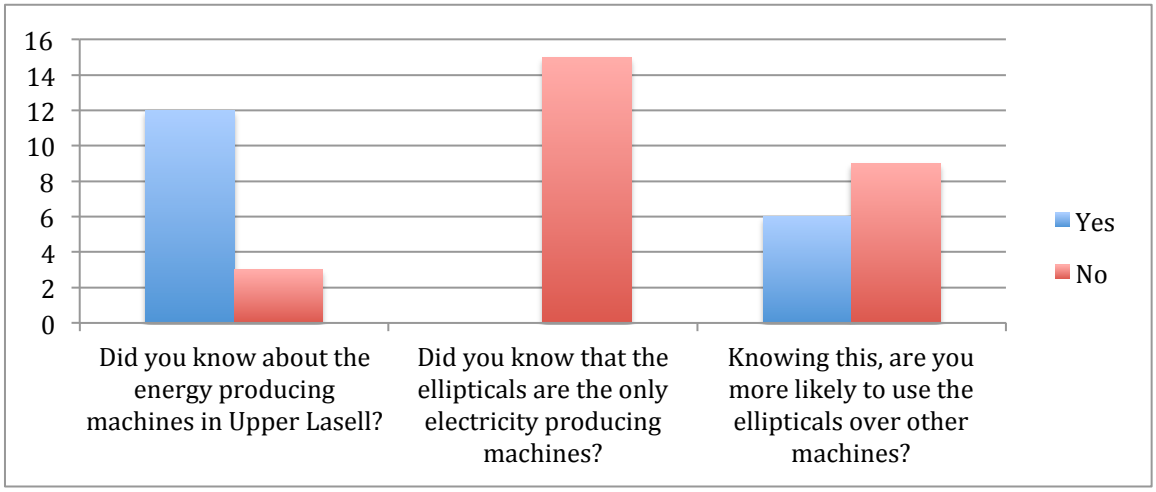

Figure 3 Survey Results

The data from the survey illustrated in Figure 3 shows that although the majority of respondents knew that Upper Lasell has energy producing equipment, it also shows that 100% of the respondents were not aware that the only machines that capable of producing electricity are the ellipticals. Nonetheless, more than half of the respondents were not willing to change their habits or workout routines to increase the energy production in the gym.

Through casual observation, it is noted that the energy produced while 6 ellipticals are in use, oscillates between 230 and 270 kWh. Therefore, according to this data, each elliptical produces about 45 kW every hour. This varies of course depending on the length, the speed, and the resistance of the workout.

Discussion

Part of the reason why people know that the gym has equipment that converts human energy into electricity but don't know that the only machines that

are capable of doing so are the ellipticals, is the lack of advertisement. During casual conversations with the respondents after the survey, not one of them knew much about the company or the program. The only indication that something like ReRev exists in Lasell, besides the different wiring that connects to the converter box on the wall, is one poster placed near the cubbies. The poster states the same general information Rerev offers on their website:

> "a typical 30-minute workout produces **50 watt hours of clean, carbon-free electricity.** That's enough electricity to run a CFL lightbulb for two hours, charge a cell phone six times, run a laptop for an hour, or a desktop computer for 30 minutes."

There is no indication that only the ellipticals are retrofitted. There is no data shared with the campus about the energy produced. There is no other promotion of the program besides the poster and there are no incentives to gage interest in the program.

Suggestions

Assuming that no other electricity producing equipment is installed in the facility, better advertisement of the program might increase the energy production of the already installed machinery. Although the majority of people were aware of the existence of electricity producing equipment in the gym, a few of them knew about it through word of mouth and thought it was a lie. Therefore, advertising should not be limited to the gym. Freshmen pamphlets should include this cool fact

and posters should be put up randomly in bathroom stalls and other places around campus.

Making a poster with specific information related to Williams would also make the program more personal for gym goers, making them aware of how their workouts on the ellipticals are contributing to the campus community. Furthermore, providing statistics on how much energy has been produced thus far and giving people an idea of what that means (like ReRev with their example of powering a laptop for thirty minutes), could be useful in keeping it fresh in people's minds. To do so, there could be a chart put at the entrance of Upper Lasell that tracks the amount of energy produced in a week paired with a small calendar that can be used to compare the amount of energy produced monthly (and consequently, yearly).

Taking it a step further into personalizing the energy-producing gym experience at Williams, something like the Ecofit Network System could be installed. The Ecofit Network System provides monitoring equipment that tracks individuals' energy production as well their workout details such as heart rate, speed, distance calories burned, among other information. Each person must sign up to receive their personal card, which is placed on a sensor on energy producing machines in order to upload the person's workout data into the network. Personal accounts are accessible through different devices and information can even be shared with other users through various social media. Workout information is stored to make it easier for each person to keep track of their progress whether it be in terms of calories burned, steps taken, or energy produced. There is also the possibility of having a screen in the gym that shows real time data of each individuals workout, tracking

how much energy is being produced at that instant through all the machines put together. Doing so would be a form of employing a descriptive norm whic according to Robert B. Cialdini in his article *Crafting Normative Messages to Protect the Environment* accomplishes the goal of encouraging people to do something that is thought of as a "good" by the rest of society. The tracking of individual workouts allows everyone to see how much energy they're contributing and because there's a group of people doing the same thing, it is like a descriptive norm where individuals can feel that contributing to the energy production is something habitual and approved of by everyone else (Cialdini, 2003).

Furthermore, more than just personalizing energy production through kinetic energy used during their workouts, people are also given incentives. Every time an individual uses their EcoFit card during a workout, they accumulate "powerpoints" which can then be redeemed for different offers from eco-friendly businesses that have partnered with EcoFit. The Victoria Athletic Club in Vancouver has successfully installed EcoFit and their gym goers seem to be very satisfied with the incentives and the tracking process. Another form of incentive is creating a healthy competitive environment between groups, teams, classes, or even schools. Tennessee Tech University and Chapman University participated in a month long competition to see who would produce the most energy. The winner of the competition will receive a $7,000 treadmill from SportsArt Fitness, the company that has provided both universities with their other machinery. In addition, Ecofit will separately reward the individuals who produced the most energy. According to various articles, the communities at each of the universities were excited to be

participating in the competition. Therefore, providing similar incentives whether it be through healthy competition or through rewarding their healthy and eco-friendly workout habits, would be a motivation for people to produce more energy through longer or harder workouts.

Figure 4 This is what a screen at the gym would like. Individual workouts are being tracked but the bar on the lower right hand corner shows how much energy they are all producing together. (http://myecofit.com/page/real-time-digital-media)

Conclusion

Although the survey results show that, people were aware that the Upper Lasell has machines that produce electricity, none knew that the only machines capable of doing so were the ellipticals. Although for the most part, people are not willing to change their workout routines to use the ellipticals more often after learning that they are the only machines capable of producing electricity, ways of possibly increasing energy production through advertisement and incentives were discussed. Better advertisement will lead to more awareness of the program in general which can in turn gage interest. Additionally, adding EcoFit trackers to the

ellipticals and providing incentives are ways to target those who already use the ellipticals and try to get them to increase the energy production. The other significant question is what other alternative options there are for producing more energy in the fitness center. One of the most obvious suggestions is to completely refurnish Upper Lasell with energy producing equipment. Following Chapman University and Tennessee Tech Univsersity's footsteps, Williams might want to look into investing in the Green System products from SportsArt Fitness.

References Cited

Cialdini, Robert B. "Crafting Normative Messages to Protect the Environment." *Current Directions in Psychological Science* 12.4 (2003): 105-9. *ProQuest.* Web. 17 May 2013.

Survey Results

Name	Class	Do you know? How often do you go to the gym?	How do you know?	Did you know it's only the ellipticals?	Does knowing that make you want to use that machine over all the others?
Antonio Blanco	2015	No/ 3x week			No
Alice Sady	2013	Yes/ 2x week	I figured it out by the way they were connected	No	No. I just like the ellipticals anyway
Maidson Weist	2015	I did! It's some really cool technology/ 2x week	Posters	No	Yes but I also don't know how to make it so they produce electricity so then it doesn't really matter
Marcela Osorio	2015	Yes I think so/2x week	I remember reading it	No	When I read it I brushed it off

			somewhere		and it didn't really influence what machines I used
Max Rivas	2013	No. That's pretty sweet/ 3x week		No	I don't know that it makes me. I think it's really cool so I'm more likely to do it since I like to consider myself a little environmentally aware.
Alex Deaderick	2015	Oh wow. I didn't know that. Which ones? / 5x week			Yea.
Jackie Rodriguez	2015	Yea./ 3x week	I saw them doing it one day to	No	No. I use the ones I need to.

			make a smoothie (No Impact Week)		
Sheba	2014	Yes/ 1x week	I think someone said it in my class but I though they were lying so I just rolled my eyes	No	Yes. It'd be cool to know that I'm producing energy for the campus.
Nneka Dennie	2013	Yes/ 3x week			No because I don't like the ellipticals as much as I like the crossramps but if there were crossramps that

					could generate electricity, I'd probably get on those.
Laura villafranco	2013	Yes/ 3x a week	There are signs in the gym	No	The electricity thing is not an incentive for me. My concern is my workout and I get a better cardio from running.
Don Polite	2013	Yes/ 1x week	Heard about it somewhere someplace and saw the sign	No	I don't really care too much. I prefer bikes.
Shinelle Edwin	2013	Yes/ 2x week	I heard about it but I thought it was more	No	It does make me want to use those machines more.

			rumor than fact		
Michelle Maycurry	2015	Yes/4x week	They have a sign by the cubbies	No. I thought it was all of them. That's weird.	Not particularly. It wouldn't really influence my routine
Charles Chirinos	2015	Yes/ 2x week	I saw the poster by the cubbies	No. I assumed it was all of them.	I think that's cool. Cardio is cardio so I would use the ellipticals more often.
Joe Long	2013	Yes/2x week	I saw it on a sign in the gym	I thought it was the treadmills and the ellipticals	No. I always use the treadmilll